

- vi. Good Character Certificate from the Head of institution most recently attended by the candidate.
- viii. National Identity Card of the candidate or Children Registration Certificate (CRC) and National Identity Card of the applicant's father/guardian.
- ix. Five recent passport size colored photographs of the candidate (attested on the backside).
- x. Migration Certificate in original from the concerned Board.
- xi. Medical Fitness Certificate on prescribed performa registered medical practitioner, at least MBBS.
- xii. Income certificate of parents, Guardian on prescribed performa from a competent authority.
- xiii. Undertaking on a Non-judicial stamp paper worth Rs.30/- according to the prescribed performa duly attested by the Oath Commissioner for non-indulgence in politics.
- xiv. A declaration signed by the candidate and countersigned by his/her father or guardian (as the case may be) to the effect that he/she would abide by the rules and regulations of the University and obey instructions issued to him/her from time to time by the University authorities.
- xv. Those candidates who are regular employees must produce permission letter and evidence of leave for the study period employer at the time of their admission.

**Undergraduate Admission****ENTRANCE TEST**

Candidates must appear in the Entrance Test conducted by the Government of Khyber Pakhtunkhwa, Educational Testing and Evaluation Agency (ETEA), Peshawar. The Entrance Test is valid for one academic year only.

- a) Candidates who have passed Intermediate (PreEngineering) examination from a recognized Board of Intermediate and Secondary Education (B.I.S.E.) in Pakistan or any other equivalent examination, have obtained at least 60% unadjusted marks, are eligible to apply for entrance test.
- b) Candidates, who have passed three years Post Matric Diploma of Associate Engineer or B-Tech (Pass) Examination and have obtained at-least 60% un-adjusted marks are also eligible to apply for entrance test.
- c) Candidates who have appeared in Part-II of Intermediate (Pre-Engineering) examination or 3-year Diploma in Associate Engineer or B-Tech (Pass) examination and are awaiting their results, are also eligible to appear in entrance test. All other admission conditions will be applicable

**DETERMINATION OF MERIT**

Merit of candidates will be determined according to the following weight-age:

- a. 10% weight-age to SSC Examination - Percent marks in SSC x 1
- b. 40% weight-age to Intermediate or equivalent examination (adjusted marks) - Percent marks in Intermediate x 4
- c. 50% weight-age to Percent marks in entrance test Entrance Test x 5

The merit of candidates applying for reserved categories/quotas shall also be determined on the basis of entrance test, Intermediate and SSC marks as in the case of open merit.

To determine merit, total marks obtained by a candidate in intermediate examination shall be adjusted in the manner given below:

- a. For each additional attempt to pass or to improve Intermediate examination, (Part-I or Part-II), candidates shall lose 10 marks. However, in any case, the total deduction of marks shall not exceed 20.
- b. Candidates taking Mathematics as additional subject shall also lose 10 marks.
- c. If a candidate is Hafiz-e-Quran, he/she will get twenty marks, provided that he/she qualified the test conducted by the Admission Committee on the date and time notified for the purpose.

In case of tie in any merit position to the selection for admission, the marks obtained in Intermediate/equivalent examination, shall be considered for merit. In case of further tie, the age of the applicants shall be the criteria and the older candidate shall get higher merit.

**Self Sustained Program**

The Uni has introduced rationalized programme for the following disciplines to be run under self sustained program.

**a. Main Campus, Peshawar**

- i. Department of Computer Systems Engineering.
- ii. Department of Computer Science Et Information Technology
- iii. Institute of Mechatronics Engineering
- iv. Institute of Industrial Engineering

**b. Mardan Campus**

- i. Department of Computer Software Engineering.
- ii. Department of Telecommunication Engineering.

**c. Abbottabad Campus**

- i. Department of Electronics Engineering.
- ii. Department of Architecture, City & Regional Planning.

The students admitted in the above disciplines shall have to pay a fee of Rs.21,000/- per semester, in addition to normal fees and user charges of the University. (This was valid only for session 2011-12)

**Admission of Foreign Nationals**

Foreign applicants seeking admission should send their applications to Ministry of Finance and Economic Affairs Government of Pakistan, Islamabad. A certificate should accompany the application form from an appropriate authority of the applicant's country to the effect that the applicant is a bona fide citizen of that country and is financially sound to meet the expenditure on his/her studies.

For admission against seats reserved for Foreign Nationals, eligibility shall be at least 60% aggregate marks in the subjects of English, Physics, Chemistry and Mathematics in Intermediate or equivalent examination.

Afghan Refugees registered in Pakistan with NADRA nominated by Government of Pakistan, Higher Education Commission, Islamabad, against Self Sustained programme or nominated by Government of Pakistan Ministry of Finance and Economics Affairs, Islamabad against their reserved seats on Technical Assistance Program, must fulfill the eligibility conditions of at least 60% un-adjusted marks in Intermediate (Pre-Engineering) or equivalent examination.

There are many disciplines at University of Engineering and Technology for students to choose from. These are supported by well equipped laboratories, departmental research, and a central library, sports facilities and enough dormitory accommodation to house all students that need campus housing.

Department of Agricultural Engineering  
Department of Basic Sciences & Islamiyat  
Department of Computer Sciences & Information Technology  
Department of Computer System Engineering  
Department of Chemical Engineering  
Department of Civil Engineering  
Department of Electrical Engineering  
Department of Industrial Engineering  
Department of Mechanical Engineering  
Department of Mechatronics Engineering  
Department of Mining Engineering

**UNIVERSITY FEES**

University admission and two semesters fee and funds for the academic year are payable in advance at the time of admission to B.Sc. Engineering classes. The candidates shall not be allowed to sit in the University examination if they have any arrears to be paid.

(a) The admission fee and other users charges, once deposited with the university shall not be refunded under any circumstances except in case of the death of an admitted student, occurring before the commencement of the classes. In such case refund of the admission fee and other user charges shall be allowed.

(b) In case a student is transferred from one discipline to another during the adjustment of seats, the fees and other user charges shall be adjusted accordingly.

(c) If a student admitted under self sustained basis, cancels his/her admission before the commencement of classes, 75% of the self-sustained fee shall be refundable.

**CAMPUSES**

With a modest beginning in 1952 as a "constituent" college of Peshawar University, the UET was born in 1980. Since then, three satellite campuses in Abbottabad, Bannu and Mardan have been established. However, Peshawar Campus remains the central nucleus of the University, keeping everything moving along the correct path.

**Contacts:** University of Engineering & Technology, Peshawar, Pakistan

**UET Exchange:** Phone: (+92-91)9216796-8 - Fax: (+92-91) 9216663

**VC Office:** Phone: (+92-91)9216493 - Fax: (+92-91) 9216494

**Registrar :** Phone: (+92-91) 9216496 - Email : [registrar@nwfpuet.edu.pk](mailto:registrar@nwfpuet.edu.pk)

Phone: (+92-91) 9216989, 9216792 - [examination@nwfpuet.edu.pk](mailto:examination@nwfpuet.edu.pk)

**Director Undergraduate Studies :** Phone: (+92-91) 9216184

**Mardan Campus :** Phone: (+92-931) 9230295 **Abbotabad Campus :** Phone: (+92-992) 381700

**Bannu Campus :** Phone: (+92-928) 610804, 610636

**INSTRUCTIONS**

- Candidates awaiting Intermediate Part-II results are also eligible to appear in the Entrance Test.
- Entrance Test shall be held at Peshawar & Abbottabad Centres as per following details:
  - Candidates who appeared in Intermediate Examination from Abbottabad Board will take Entrance Test at Abbottabad Centre.
  - Candidates who appeared in Intermediate Examination from other Boards of Intermediate & Secondary Education of Khyber Pakhtunkhwa, (except Abbottabad Board) will take Entrance Test at Peshawar Center.
  - Candidates from Federal and other Boards of the country may opt for either Peshawar or Abbottabad centre.
- Please attach clear, legible and attested copies of the following documents:
 

a. Detail Marks Certificate of Intermediate Part-I (Pre-Engineering/Pre-Medical).	Yes <input type="checkbox"/>	No <input type="checkbox"/>
b. Detail Marks Certificate of B-Tech /Diploma of Associate Engineer if applicable.	Yes <input type="checkbox"/>	No <input type="checkbox"/>
c. Domicile Certificate of the candidate.	Yes <input type="checkbox"/>	No <input type="checkbox"/>
d. Three recent passport size (2"x2") coloured photographs with white background, one attested on face and two on back.	Yes <input type="checkbox"/>	No <input type="checkbox"/>
e. Original payment receipt of Rs. 1100/-	Yes <input type="checkbox"/>	No <input type="checkbox"/>

**Important**

- Eligibility for admission is 60% unadjusted marks in Intermediate Examination. A candidate who secures less than 60% marks in Intermediate Examination shall stand ineligible for admission, irrespective of the fact that he/she may have qualified the Entrance Test based on Intermediate Part-I marks.
- Candidates, who have passed Intermediate Examination with the subject of Computer Science instead of Chemistry, are eligible for admission in Computer Systems Engineering and Computer Software Engineering only. They are allowed to take Entrance Test and attempt Computer Science portion instead of Chemistry.
- Incomplete and late applications shall not be entertained.
- Any false information provided, will lead to disqualification. The University reserves the right to initiate further legal action.

MEDICAL ENTRANCE TEST 2005

1. Which one of the following series are observed in the visible region of electromagnetic radiation.  
a. Lyman series      b. Balmer series      c. Bracket series      d. Plunds series
2. One hollow and one solid cylinder of same radlus are rolling down an inclined plane. Which of them will reach the end of the plane first.  
a. Solid cylinder      b. Hollow cylinder      c. Both simultanesouly      d. Depends upon the behavior among them
3. Which one of the following animals possesses an open circulatory system.  
a. Amoeba      b. Earthworm      c. Grasshopper      d. Man
4. When n-heptane is heated in the absence of air at high temperature in the presence of catalyst, it changes to 2,2,4 triethyle pentane. This process is called  
a. Cracking      b. Reforming      c. Polymerisation      d. Condensation
5. When an object slides at constant speed down an inclined plane, the coefficient of friction may be approximately be  
a.  $\sin \theta$       b.  $\cos \theta$       c.  $\tan \theta$       d.  $\cot \theta$
6. Which one of the following is the additional function of the embryonic membranes?  
a. Respiration and reproduction      b. Reproduction and nourishment  
c. Storage of waste products      d. Respiration and storage of waste products
7.  $\text{LaH}_{2.75}$  is the formula  
a. Of normal binary hydride      b. Of an interstitial hydride  
c. Of covalent hydride      d. That does not exist
8. A particle was ejected from the nucleus of an atom in a radioactive decay and atomic number of the atom increased. The particle was probably  
a. A proton      b. A neutron      c. An alpha particle      d. A beta particle
9. The following reaction might be used for controlled nuclear fusion  
 ${}_3\text{Li}^7 + {}_1\text{H}^2 \rightarrow 2({}_2\text{He}^4) + \text{X}$ . What is the particle X?  
a. An  $\alpha$ -particle      b. An electron      c. A neutron      d. A proton
10. During inspiration the  
a. Chest wall is raised and diaphragm is lowered      b. Chest wall is raised and diaphragm is also raised  
c. Chest wall is lowered and diaphragm is raised      d. Chest wall is lowered and diaphragm is also lowered
11. From the moment he look over the public office, his actions have  
a. Been loaded with significance and filled with worth      b. Been significant and worthwhile  
c. To be loaded with significance and filled with worth      d. Been actions of significance and worth
12. What happens to the molecule when its atoms are brought closer than the bond length between them?  
a. Molecule becomes unstable      b. Molecule becomes more stable  
c. Molecule starts vibrating      d. Stability of the molecule remains un-changed
13. The ratio between mean life and half life is  
a.  $\log^2$       b.  $1/\log \lambda$       c.  $1/\lambda$       d.  $(\log 2)^{-1}$
14. ....
15. Which of these lack ambryo?  
a. II and IV only      b. I and V only      c. III and V only      d. I and III only



16. Rate of diffusion on  $\text{NH}_3$  is 1.6 times faster than  $\text{CO}_2$ . the correct form of the rate law equation for this statement will be
- a.  $\frac{r_{\text{NH}_3}}{r_{\text{CO}_2}} = 1.6$       b.  $\frac{r_{\text{NH}_3}}{r_{\text{CO}_2}} = \frac{1.6}{1}$       c.  $\frac{r_{\text{CO}_2}}{r_{\text{NH}_3}} = \frac{1}{1.6}$       d. None of these
17. According to the postulates of the theory of Relativity, a fourth dimension has been added to the three dimensions already associated with a Cartesian frame of reference. Which is the fourth dimension?
- a. Space      b. Inertial frame of reference      c. Speed of light      d. Time
18. Pancreatic juice contains all except
- a. Amylase      b. Lipase      c. Hydrochloric acid      d. Trypsin
19. Consider the reaction  $3\text{H}_2(\text{g}) + \text{N}_2(\text{g}) \rightarrow 2\text{NH}_3(\text{g})$  All of the following will lead in this reaction to the production of more  $\text{NH}_3$  except
- a. A decrease in the volume of the container      b. An increase in pressure by addition of hydrogen  
c. Removal of  $\text{NH}_3$       d. An increase in pressure by addition of nitrogen
20. Which of the following is a pair of conservative and non conservative forces?
- a. Gravitational forces and elastic forces      b. Frictional force and propulsion for of a motor  
c. Electric force and tension in string      d. Propulsion force of rocket and air resistance
21. Consider the following names of some plants
- a. Grapes      b. Mango      c. Oats      d. Willow
- Which of them is the most appropriate for panicle inflorescence?
- a. I, II and III only      b. I and II only      c. II and IV only      d. I and IV only
22. -----
23. If a single balloon is filled with equal volumes of hydrogen, helium, nitrogen, and neon, which gas will be depleted first?
- a. Helium      b. Hydrogen      c. Nitrogen      d. Neon
24. A constant force  $F$  is applied on a body of mass  $m$  for time interval  $t$ . because of this force the velocity of body changes from  $v_i$  to  $v_f$ . Then the changes in momentum during the interval  $\Delta t$  will be
- a.  $\frac{1}{2}m(v_f^2 - v_i^2)$       b.  $\frac{\Delta t}{ma}$       c.  $\frac{m(v_f - v_i)}{\Delta t}$       d.  $ma$
25. Pumping denser blood causes the heart to be strained and waste products become concentrated in the body. What is the cause of these problems?
- a. Excess of water      b. Deficiency of minerals      c. Deficiency of oxygen      d. Dehydration
26. Which one of the following is the strongest acid?
- a.  $\text{CH}_2\text{Cl}-\text{CH}_2-\text{COOH}$       b.  $\text{CHCl}_2\text{COOH}$       c.  $\text{CH}_3-\text{COOH}$       d.  $\text{CH}_3-\text{CH}_2-\text{COOH}$
27. -----
28. The enormous diversity of protein molecules is mostly due to the diversity of
- a. Amino groups on the amino acids      b. R groups on the amino acids  
c. Peptide bonds      d. Amino acids sequences within protein molecules
29. Her brother along with her parents \_\_\_\_\_ that she remain in school
- a. Insist      b. Insists      c. Are insisting      d. Were insisting
30. When a mixture of Benzene vapours and air is passed over  $\text{V}_2\text{O}_3$  at  $450^\circ\text{C}$ , Benzene is oxidized with the rupture of Benzene ring. Identify the product of the reaction
- a. Carbon dioxide and water      b. Meic anhydride      c. Succinic anhydride      d. Acetic anhydride

31. The efficiency of a Carnot engine, that is operating between a cold reservoir at temperature  $T_c$  and a hot reservoir  $T_h$ , is dependent upon
  - a. The heat capacity of working substance
  - b. Only the temperature of two reservoirs
  - c. The reservoir temperature and the heat capacity of the working substance
  - d. The reservoir temperature and the volume change during heat absorption
32. The glucose is reabsorbed by the
  - a. Proximal convoluted tubule of Nephron
  - b. Distal convoluted tubule of Nephron
  - c. Glomerulus
  - d. Bowman's capsule
33. Identify the compound formed when ethylene combines with water in the presence of 10% sulphuric acid and  $\text{HgSO}_4$  as catalyst
  - a. Carbinol
  - b. Methanol
  - c. Ethanol
  - d. Glycol
34. -----
35. Plasmodium is found at different stages in man and mosquito. At which stage it can be seen in both the hosts?
  - a. Ookinete
  - b. Male gamete
  - c. Oocyst
  - d. Sporozoite
36. Extra cellular digestion occurs in
  - a. Grasshopper and protozoa
  - b. Grasshopper and frog
  - c. Earthworm and protozoa
  - d. Frog and protozoa
37. Which one of the following is NOT correct
  - a. Chlorine gas is used to prepare germicide and pesticides
  - b. Hydrogen gas is used for the preparation of vegetable ghee
  - c. Alums are used for tanning of hide
  - d. Aluminium is used as mordant
38. Once the space shuttle is in orbit at a radius  $R$  from earth's centre, what force does the seat exert on the astronaut?
  - a.  $Mg$
  - b. Zero Newton
  - c.  $M/g$
  - d.  $Mg/R^2$
39. Catenation is a process in which carbon shows the properties of making
  - a. Multiple bonds
  - b. Hybridization
  - c. Long chain or rings of carbon atoms
  - d. Showing isomerism
40. Why do the rain drops fall with constant speed during the later stages of their journey?
  - a. The air resistance just balances the force of gravity
  - b. The force of gravity is constant for all drops
  - c. All drops fall from the same height
  - d. The drops are small so force of gravity is negligible for them
41. If the area of a circle is equal to its circumference the radius of this circle is
  - a. 1
  - b. 2
  - c. 3
  - d. 4
42. Silver nitrate solution turns blue when a piece of copper is added to it. This is because of
  - a. Oxidation of Ag
  - b. Reduction of Cu
  - c. Oxidation of Cu
  - d. Reduction of Ag
43. What is the current in a  $2 \times 10^6$  ohms resistor having a potential difference of  $6 \times 10^3$  volts?
  - a.  $1 \times 10^{-3}$  A
  - b.  $2 \times 10^{-3}$  A
  - c.  $3 \times 10^{-3}$  A
  - d.  $4 \times 10^{-3}$  A
44. Where does the oesophagus open in the alimentary canal of earthworm?
  - a. Buccal chamber
  - b. Intestine
  - c. Rectum
  - d. Intestinal caecum
45. In which of the following solvents are alkenes the most soluble?
  - a. Water
  - b. Ethyl alcohol
  - c. Ammonia
  - d. Carbon tetrachloride
46. A particle moves along a straight line. The distance  $x$  described in time  $t$  is given by the equation  $x = t^3$ . The acceleration at  $t = 1$  is initial velocity =  $c$ 
  - a.  $A = 1$
  - b.  $B = 2$
  - c.  $C = 3$
  - d.  $D = 4$

47. The gametophyte of Ulva is  
a. Haploid                      b. Diploid                      c. Triploid                      d. Polyploidy
48. The compound B formed in the sequence of reaction  $CH_3CH_2CH_2OH \xrightarrow{Pcl_3} A \xrightarrow{Alc-HOH} B$  is  
a. Propylene                      b. Propane                      c. Propene                      d. Propanol
49. A 2N force acts on a mass. If the momentum of the mass changes by 120kg m/sec, then the force acts for a time of  
a. 8 sec                      b. 30sec                      c. 60 sec                      d. 120sec
50. Which of the following base is not present in RNA  
a. Thymine                      b. Adonine                      c. Guanine                      d. Cytosine
51. Which of the following pairs of molecules have similar geometry?  
a. CO<sub>2</sub> and SO<sub>2</sub>                      b. BF<sub>3</sub> and NH<sub>3</sub>                      c. MgCl<sub>2</sub> and AlCl<sub>3</sub>                      d. CH<sub>4</sub> and SiH<sub>4</sub>
52. When a beam of light traveling in a rare Medium is reflected from a denser medium it  
a. Suffers no phase change                      b. Undergoes a phase change of 180°  
c. Undergoes a phase change of 270°                      d. Undergoes a phase change of 90°
53. Consider the sentence "they made him king". four choices are given below for this sentence to be rendered into 'passive voice'. Select the correct one  
a. He has been made king by them                      b. He will be made king  
c. They will make king to him                      d. He was made king
54. A mixture of 50g H<sub>2</sub> and 50g He has a total pressure of 1.5atm. what is the partial pressure of H<sub>2</sub> gas  
a. 1.0atm                      b. 2.0atm                      c. 1.5atm                      d. 3.0atm
55. Silver nitrate solution turns blue when a piece of copper is added to it. This is because of  
a. Oxidation of Ag                      b. Reduction of Cu                      c. Oxidation of Cu                      d. Reduction of Ag
56. What is the current in a  $2 \times 10^6$  ohms resistor having a potential difference of  $6 \times 10^3$  volts?  
a.  $1 \times 10^{-3}$  A                      b.  $2 \times 10^{-3}$  A                      c.  $3 \times 10^{-3}$  A                      d.  $4 \times 10^{-3}$  A
57. Where does the oesophagus open in the alimentary central of earthworm?  
a. Buccal chamber                      b. Intestine                      c. Rectum                      d. Intestinal caccum
58. In which of the following solvents are alkenes the most soluble?  
a. Water                      b. Ethyl alcohol                      c. Ammonia                      d. Carbon tetrachloride
59. A particle moves along a straight line. The distance x described in time t is given by the equation  $x = t^3$ . The acceleration at t = 1 is initial velocity = c  
a. A = 1                      b. B = 2                      c. C = 3                      d. D = 4
60. The gametophyte of Ulva is  
a. Haploid                      b. Diploid                      c. Triploid                      d. Polyploidy
61. The compound B formed in the sequence of reaction  $CH_3CH_2CH_2OH \xrightarrow{Pcl_3} A \xrightarrow{Alc-HOH} B$  is  
a. Propylene                      b. Propane                      c. Propene                      d. Propanol
62. A 2N force acts on a mass. If the momentum of the mass changes by 120kg m/sec, then the force acts for a time of  
a. 8 sec                      b. 30sec                      c. 60 sec                      d. 120sec
63. Which of the following base is not present in RNA  
a. Thymine                      b. Adonine                      c. Guanine                      d. Cytosine
64. Which of the following pairs of molecules have similar geometry?  
a. CO<sub>2</sub> and SO<sub>2</sub>                      b. BF<sub>3</sub> and NH<sub>3</sub>                      c. MgCl<sub>2</sub> and AlCl<sub>3</sub>                      d. CH<sub>4</sub> and SiH<sub>4</sub>

65. When a beam of light traveling in a rare Medium is reflected from a denser medium it:  
 a. Suffers no phase change  
 b. Undergoes a phase change of  $180^\circ$   
 c. Undergoes a phase change of  $270^\circ$   
 d. Undergoes a phase change of  $90^\circ$
66. Consider the sentence "they made him king". four choices are given below for this sentence to be rendered into 'passive voice'. Select the correct one  
 a. He has been made king by them  
 b. He will be made king  
 c. They will make king to him  
 d. He was made king
67. A mixture of 50g  $H_2$  and 50g He has a total pressure of 1.5atm. what is the partial pressure of  $H_2$  gas  
 a. 1.0atm  
 b. 2.0atm  
 c. 1.5atm  
 d. 3.0atm
68. A piece of wood and a piece of iron seem to lose the same weight when completely submerged in a liquid. The two pieces must have the same  
 a. Weight in water  
 b. Weight in liquid  
 c. Weight in air  
 d. Volume
69. Which of the following is not present in the fish  
 a. Middle ear  
 b. Internal ear  
 c. Gills  
 d. Fins
70. A solution of 2.0 g NaOH dissolved in 1000g of water has the following concentration.  
 a. 0.50m  
 b. 0.05M  
 c. 0.05N  
 d. 0.05m
71. If the speed of sound in air is 340 m/sec. what is the wavelength of a 1-KHz sound wave  
 a. 3.40m  
 b. 2.94m  
 c. 0.340m  
 d. 0.294m
72. Interpret  
 a. Non \_\_\_\_\_  
 b. Un \_\_\_\_\_  
 c. Dis \_\_\_\_\_  
 d. Mis \_\_\_\_\_
73. When aldehyde is warmed with fehling reagent  
 a. A red precipitate of  $Cu_2O$  is formed  
 b. A black precipitate of CUO is formed  
 c. Silver mirror is formed  
 d. No reaction occurs
74. Which type of electromagnetic radiation has the longest wavelength  
 a. Gamma rays  
 b. UV  
 c. Microwaves  
 d. X-rays
75. Lactose, maltose and sucrose are the important  
 a. Polysaccharides  
 b. Disaccharides  
 c. Monosaccharides  
 d. Oligasoccharides
76. Continuous adsorption spectrum is obtained from  
 a. Excited atoms  
 b. Excited molecules  
 c. Ground state molecules  
 d. Ground state atoms
77. In order to change the momentum of an objective there must be  
 a. A force applied  
 b. A change in time  
 c. A change in distance  
 d. A change in temperature
78. Hyper functioning of thyroid gland will cause  
 a. Enlargement of bones  
 b. Slow heart rate and nervousness  
 c. Loss of body weight  
 d. Sexual precocity
79. The force of one Newton per meter square is equal to one  
 a. Bar  
 b. Atm  
 c. Pascal  
 d. Erg
80. \_\_\_\_\_
81. While determining the expression for time period of simple pendulum, we keep the amplitude  
 a. Large  
 b. Small  
 c. Maximum  
 d. Zero
82. Qunine, an a drug very effective against malaria, is derived from the bark of  
 a. Quina quina  
 b. Lathyrus plant  
 c. Calotropis plant  
 d. Cinchona plant



83. The net heat change in a chemical reaction is same whether it takes place in one step or several steps. This law is known as  
 a. First law of thermodynamic      b. Henery's law      c. Hess's law      d. Joule's law
84. An ocean wave has amplitude of 2.5m. weather condition suddenly changes such that the wave has amplitude of 5.0m. the amount of energy transported by the wave is  
 a. Halved      b. Doubled      c. Quadrupled      d. Remain the same
85. The number of vertebrate in vertebrate column at man are  
 a. 37      b. 35      c. 34      d. 33
86. In a reaction of ethene and hydrochloric acid, the hydrogen ions act as  
 a. Nucleophiles      b. Electrophiles      c. Cabon ions      d. Carbonium ions
87. When a generator is being driven at 1200rpm, the generated emf is 130 volts. What is the generated emf, if the speed is reduced to 600 rpm, while the field flux remains unchanged?  
 a. 65V      b. 260V      c. 60V      d. 10V
88. Which one of the following is necessary for evolution of seeds?  
 a. Introduction of heterospory      b. Retention of the magaspore within megasporangium  
 c. Fertilization of the egg prior to discharge      d. All of the above
89. Which compound reacts with chlorine to give two products in which chlorine has different oxidation number?  
 a. Ethane      b. Potassium iodate (V)      c. Sodium hydroxide      d. Potassium iodide
90. A girl sitting on a spinning bar stool with her legs folded, suddenly out spreads then her angular velocity will:  
 a. Decrease      b. Increase      c. Remain the same      d. First increase and then decrease
91. Consider the following sentence: He shouted, "Let me go". Which one of the following stands for the "indirect speech" of the above sentence  
 a. He requested that let him go      b. He shouted to let him go  
 c. He shouted to them to let him go      d. He imported them to let me o.
92. Which of the following are Iso electronic with each other  
 a. Na and Ne      b. Ne and O      c. K and O      d. Na and K
93. When longitudinal waves propagate through a medium, the particles of the medium  
 a. Vibrate parallel to the direction of propagation of waves  
 b. Vibrate perpendicular to the direction o propagation of waves  
 c. Do not move at all      d. Vibrate at an angle of 360o to the direction of waves
94. The alternative form of given gene are called  
 a. Dominant      b. Recessive      c. Phenotype      d. Alleles
95. When magnesium reacts with steam what would be the end product?  
 a. Mg (OH)      b. MgO      c. MgO 10H<sub>2</sub>O      d. MgO<sub>2</sub>
96. In the absence of an external torque, the angular momentum of a rotating body is  
 a. Constant      b. Variable      c. Unstable      d. Zero
97. All of the following are bacterial diseases except  
 a. Cholera      b. Tuberculosis      c. Typhoid      d. Poliomyelitis
98. What is the oxidation state of sulphur in sulphuric acid (H<sub>2</sub>SO<sub>4</sub>)  
 a. -6      b. +6      c. -4      d. +4
99. A lamp is connected to a 12-volt battery. An ammeter indicates a current of 5 amps. The watt of the lamp is  
 a. 2.4 watts      b. 120 watts      c. 60 watts      d. 300 watts

100. In which of the following organs of man does meiosis occur  
a. Liver                      b. Kidney                      c. Ovaries                      d. Heart
101. In the given Exothermic reaction  $PCl_3 + Cl_2(g) \rightarrow PCl_5(g)$  an increase in yield will be favored by:  
a. Decrease of temperature                      b. Increase of temperature  
c. Keeping temperature constant                      d. None of these
102. An object is placed at a distance of 6cm from a lens that has focal length of 4cm, where is the image located.  
a. 10cm                      b. 12cm                      c. 14cm                      d. 16cm
103. In fungi the important adaptation for terrestrial mode of life is disappearance of  
a. Rhizoids                      b. Stolons                      c. Sporangioophores                      d. Flagellated cells
104. Crystals in general, may have greater refractive index or electrical conductivity in one direction than another. It is called  
a. Polarity                      b. Optical activity                      c. Anisotropy                      d. Cleavage plane
105. When temperature of a radioactive substance is changed, the radiation emitted will  
a. Increase                      b. Remain the same  
c. Decrease                      d. Increase or decrease depending upon the temperature of the substance
106. Each malpighian tubule of grasshopper is an outgrowth from beginning of:  
a. Haemocoel                      b. Nephridiopore                      c. Urinary tubeles of kidney                      d. Proctodaeum
107. If the stay of 6 men for 14 days in a hotel costs Rs. 3360, find the cost for stay of 4 men for 7 days in the same hotel?  
a. 823                      b. 1120                      c. 1372                      d. 2520
108. Which metal imparts green color to Bunsen flame  
a. Na                      b. Ca                      c. Sr                      d. Ba
109. The waves which do not require any medium for their propagation are called  
a. Electromagnetic waves                      b. Mechanical waves                      c. Sound waves                      d. Tidal waves
110. DNA and histones together form a bead like structure called  
a. Mesosome                      b. Polysome                      c. Nucleosome                      d. Centrosome
111. What is the oxidation number of hydrogen in metal hydrides  
a. 0                      b. +1                      c. 2                      d. -1
112. The energy carried by water waves is proportional to the  
a. Wavelength squared                      b. Amplitude squared  
c. Squareroot of the wave length                      d. Square root of the amplitude
113. The mesodermal cell which give rise to urinary system in frog are called  
a. Pincer cells                      b. Blastomers                      c. Nephrotome                      d. Parietal
114. Consider the reaction:  $NO_2(g) + CO(g) \rightarrow NO(g) + CO_2(g)$ . it shows that the reaction is  
a. Bimolecular                      b. Unimolecular                      c. Trimolecular                      d. Tetramolecular
115. A cyclist moves a distance of 4km towards east and then a distance of 3km towards north. How far is he from the staring point?  
a. 3km                      b. 9km                      c. 7km                      d. 5km
116. The growth and reproduction of eukaryotic cell is dependent upon its  
a. Cytoplasm                      b. Nucleus                      c. Vacuoles                      d. Nuclear pores
117. Copper displace which of the following metals from its salt solution  
a.  $ZnSO_4$                       b.  $FeSO_4$                       c.  $AgNO_3$                       d. All of the above

118. The process in which a system undergoes a change of state at constant volume is called.  
 a. Isothermal      b. Isochronic      c. Adiabatic      d. Isobaric
119. Cortisone is an important hormone of  
 a. Adrenal cortex      b. Adrenal medulla      c. Cerebral cortex      d. Cerebral medulla
120. Which one of the following will produce a pink color in a discharge tube.  
 a. Neon      b. Nitrogen      c. Helium      d. Oxygen
121. A force of 2000 dynes is applied to a mass of 250gm. What acceleration would be obtained  
 a. 25      b. 20      c. 16      d. 8
122. Note: Fill in the blank: He asked me to bring a chair and sit \_\_\_\_\_ him  
 a. Next to      b. Besides      c. Towards      d. Among
123. The number of oxygen in 0.5 mole of  $Al_2(CO_3)_3$  is  
 a.  $4.5 \times 10^{23}$       b.  $3.6 \times 10^{24}$       c.  $2.7 \times 10^{24}$       d.  $9.0 \times 10^{23}$
124. Diver curls his body when diving so that he can perform some quick somersaults. This is because  
 a. His angular momentum increases      b. His effective radius increases  
 c. His angular momentum decreases      d. His angular velocity increases
125. Milk is pasteurized by heating at  
 a.  $100^\circ\text{C}$       b.  $100^\circ\text{C}$  for 30 min  
 c.  $71^\circ\text{C}$  for 15min and  $62^\circ\text{C}$  for 32 min      d.  $71^\circ\text{C}$  for 32 min and  $62^\circ\text{C}$  for 15 sec
126. Which of the following has the greatest ability to form complexes with  $Al^{3+}$   
 a.  $H_2O$       b.  $F^-$       c.  $Cl^-$       d.  $SO_4^{--}$
127. If two electrons are passing across a point in 2 seconds then the current flowing will be  
 a. One ampere      b. Two amperes      c.  $1.6 \times 10^{19}$  amperes      d.  $1.6 \times 10^{19}$  amperes
128. The number of vertebrae in coccyx are  
 a. 2      b. 3      c. 4      d. 5
129. Which one of the following chemical reactions is represented by the equation:  $Cl_2 + kBr \rightarrow KCl + Br_2$   
 a. Decomposition      b. Redox      c. Hydration      d. Precipitation
130. Two forces having magnitudes 3.5N and 5.5N are acting on a body. Which one of the following cannot be the resultant of their possible sum  
 a. 1.5N      b. 2.5N      c. 4.5N      d. 6.5N
131. The genetic material of plant viruses mostly is  
 a. DNA      b. RNA      c. Both DNA and RNA      d. Proteins
132. Which gas deviates most from ideal behavior at room temperature and pressure  
 a. Hydrogen      b. Nitrogen      c. Methane      d. Sulphur dioxide
133. If the induced electric field at a distance of 1cm is 50 N/C, then change in magnetic flux per sec in Weber will be  
 a.  $\pi$       b.  $4\pi$       c.  $3\pi$       d.  $2\pi$
134. The percentage of arthropods in animal kingdom is  
 a. 45%      b. 60%      c. 75%      d. 85%
135. If sum of the two numbers is -9 and their product is -36, then the numbers are  
 a. 12, -3      b. -12, 3      c. -12, -3      d. 9, -4
136. When the value of principal quantum No. is  $n = 2$ , the value of magnetic quantum number (m) is  
 a. +1, 0, -1      b. 0, +1, +2      c. -1, 0, +1      d. 0, -1, +1

137. A double convex lens acts as a diverging lens when the object is placed  
 a. At the focus      b. At  $2f$       c. Between  $f$  and  $2f$       d. Within the focal length
138. The epidermis of the xerophytes is covered with a waxy layer called  
 a. Cellulose      b. Cuticle      c. Chitin      d. Lignin
139. Which ion is present in the highest concentration in a 2 mole/cm<sup>3</sup> solution of sodium sulphate  
 a. The hydrogen ion,  $H^+$       b. The hydroxide ion,  $OH^-$   
 c. The sodium ion,  $Na^+$  (aq)      d. The sulphate ion,  $SO_4^{2-}$  (aq)
140. The angle subtended by the circumference of a circle at its centre  
 a.  $2\pi$  radians      b.  $\pi$  radians      c. 270 degrees      d. 180 degrees
141. The allele that exist in more than two different forms are called  
 a. Polygenic alleles      b. Multigenic alleles      c. Multiple alleles      d. Hetrogenic alleles
142. The study of heat changes accompanying a chemical reaction is known as  
 a. Thermo – chemistry      b. Thermodynamics      c. Electro chemistry      d. Chemical kinetics
143. Which one of the following must be decreased in order to increase the capacitance of a capacitor?  
 a. The area of the plates      b. The distance between the plates  
 c. The number of plates      d. The dielectric constant
144. In which part of the human body the bacteria are normally present in abundance  
 a. Salivary gland      b. Stomach      c. Intestine      d. Liver
145. In the human body all the given organs are vestigial except  
 a. Appendix      b. Leg muscles      c. Coccyx      d. Nictitating membrane
146. Which one of the following is not a physical property  
 a. Corrosion      b. Solubility      c. Melting point      d. Boiling point
147. The change of magnetic flux through a circuit will produce  
 a. Magnetic field      b. Electric field      c. Induced amf      d. Alternating current
148. A man of letters is  
 a. A postman      b. A person who is fond of writing letters  
 c. A man well versed in literature      d. A man who writes letters for others
149. On complete oxidation, one mole of an organic compound gave four moles of water. The compound could be  
 a. Methanol      b. Propane      c. Ethylene      d. Benzene
150. Water is not used as thermometric liquid mainly because if  
 a. Is colorless      b. Is a bad conductor      c. Does not expand linearly      d. Has a low boiling point of  $100^\circ C$
151. What is ..... %age of carbohydrates in the mammalian Cell per total cell weight  
 a. 2      b. 4      c. 8      d. 18
152. ....
153. A solenoid is formed by winding  
 a. Wire in a helix around a box      b. Wire in a helix around a cylindrical surface  
 c. Wire in a helix on a plain surface      d. Cannot be made using wire
154. In hydra, planaria and earthworm the exchange of gases occur through the  
 a. Lungs      b. Gills      c. Trachea      d. General body surface
155. When formaldehyde is heated with concentrated ammonia a solid substance is formed that is it



156. The phenomenon, in which electron and positron are converted into two photons, is called  
 a. Pair production      b. Compton effect      c. Annihilation of matter      d. Photoelectric effect
157. ....
158. Calculate the number of moles of NaCl in 75.0g of table salt  
 a. 0.643      b. 0.779      c. 28.0      d. 1.28
159. If kinetic energy of a body is increased by 300% then % increase in momentum is  
 a. 300%      b. 100%      c. 50%      d. 200%
160. Increased secretion of antidiuretic hormone is due to  
 a. Decreased water supply      b. Kidney disorder      c. Homeostatic      d. Increase water supply
161. Oxygen molecule has two unpaired electrons. It is therefore,  
 a. Ferromagnetic      b. Diamagnetic      c. Electromagnetic      d. Paramagnetic
162. When a solid is heated, which of the following changes occur  
 a. The density increases      b. The latent heat increases  
 c. The molecule vibrate more rapidly      d. The melting point increases
163. The rough endoplasmic reticulum is involved in the synthesis of  
 a. Proteins      b. Carbohydrates      c. Phospholipids      d. Terpendoids
164. The sample of a compound contains 0.100g of hydrogen and 4.20g of nitrogen. The simplest formual for the compound is  
 a.  $\text{HN}_2$       b.  $\text{NH}_3$       c.  $\text{HN}_3$       d.  $\text{NH}_2$
165. If x-component of a vector is 3N and Y – component is -3N, then the angle of resultant with x-axis will be  
 a.  $45^\circ$       b.  $135^\circ$       c.  $225^\circ$       d.  $315^\circ$
166. -----
167. What type of hybrid orbits are used by the carbon atoms in  $\text{C}_2\text{H}_4$ ?  
 a. sp      b.  $\text{sp}^2$       c.  $\text{d}^2\text{s}$       d.  $\text{p}^2$
168. The wavelength of last spectral line in Lyman series in terms of Rydberg constant (R) is equal to  
 a. R      b.  $\text{R}^2$       c.  $1/\text{R}$       d.  $1/\text{R}^2$
169. Which one of the following has no digestive tube  
 a. Tape worm      b. Liver fluke      c. Planaria      d. Round worm
170. Esters are represented by the general formula  
 a. ROP      b. BOOR      c. RCOOR      d. RCOOH
171. The transitory stage in between cleavage and gastrulation is  
 a. Organogenesis      b. Blastula      c. Gastrula      d. Development
172. Which is least important in photosynthesis  
 a. Red light      b. Blue light      c. Sunlight      d. Green light
173. Fill in the blank: Two and two \_\_\_\_\_ four  
 a. Can be      b. Make      c. Makes      d. Is equal to

174. A wire of length 1m is carrying a current of 2A, and is held perpendicular to a magnetic field of 0.5 tesla. It will experience a force of  
 a. 1N                      b.  $\frac{1}{2}$  N                      c.  $\frac{1}{3}$  N                      d.  $\frac{1}{4}$  N
175. -----
176. In sickle cell hemoglobin only one glutamic acid of normal hemoglobin is replaced by  
 a. Valine acid                      b. Alanine acid                      c. Arginine acid                      d. Methionine acid
177. Which one of the following is a marine alga  
 a. Nostoc                      b. Volvox                      c. Spirogyra                      d. Ulva
178. The conduction due to charges produced by pair generation in a semi conductor is called  
 a. Polairyt                      b. Intrinsic conduction                      c. Electrostatic                      d. Amplitude modulation
179. Choose the word closest in meaning to the word GENOCIDE  
 a. Self destruction                      b. Murder of a father                      c. Murder of a kin                      d. Killing an entire race
180. -----
181. The follicle stimulating hormone secreted by the pituitary glands stimulates the growth of  
 a. Uterus                      b. Ovaries                      c. Graffian follicles                      d. Urinary bladder
182. Bacteria reproduce asexually by  
 a. Mitosis                      b. Meioses                      c. Conjugation                      d. Fission
183. Which one of the following compounds has the least ionic character  
 a. CCL4                      b. KCl                      c. MgCl2                      d. BaCl2
184. Number of electric lines of force passing through a certain area is known as  
 a. Electric field                      b. Electric flux                      c. Electric intensity                      d. Gravitational field
185. Law of independent assortment cannot be applied on  
 a. Dominant genes                      b. Recessive genes                      c. Linked genes                      d. Auto somal genes
186. Bauthinia variegata (kachnar) belongs to family  
 a. Leguminosae                      b. Soldnacoae                      c. Brassicaceae                      d. Graminea
187. All of the following are angiosperms except  
 a. Cactus                      b. Amaryllis                      c. Spurge                      d. Firs
188. What happens to oxygen in the electron transfer chain in respiration?  
 a. It is released as gas                      b. It forms CO2                      c. It is reduced to water                      d. It is used as an electron carier
189. Which one of the following is not a commonly occurring sulphur compound?  
 a. H2S                      b. Ag2S                      c. SO2                      d. SO3

MEDICAL ENTRANCE TEST 2006

1. The role of bacterial population in the large intestine of man is to;
  - a. break down of cellulose
  - b. synthesize some vitamins
  - c. produce intestinal juice
  - d. absorb water and mineral salts
2. Which one of the Grignard reaction below could give rise to  $CH_3CH_2CH(OH)CH_2CH_3$ 
  - a. propane and methyl grignard
  - b. Methyl ethyl ketone and methyl grignard
  - c. propanaldehyde and ethyl Grignard
  - d. None of these
3. Laser is a device which can produce:
  - a. Intense beam of light
  - b. Coherent beam of light
  - c. monochromatic beam of light
  - d. all of the above
4. The social organization of howling monkeys was studied by:
  - a. Allen
  - b. Thorpe
  - c. schjeldeup-ebbc
  - d. carpenter
5. Which one of the following acids has the highest PH value:
  - a.  $HCl(aq)$
  - b.  $HNO_3(aq)$
  - c.  $HF(aq)$
  - d.  $H_2SO_4(aq)$
6. 'Browned off' means:
  - a. grilled properly
  - b. bored
  - c. discouraged
  - d. cleaned
7. If the moveable mirror is displaced through distance of 0.05 mm, 200 fringes are observed shifted. The wavelength of light used is:
  - a.  $5 \times 10^{-10} m$
  - b.  $5 \times 10^{10} m$
  - c. 500 nm
  - d. 50nm
8. A cell fails to detoxify the waste substances produced in it because it does not possess enough:
  - a. lysosomes
  - b. ribosome
  - c. rough endoplasmic reticulum
  - d. smooth endoplasmic reticulum
9. At constant temperature, as the pressure of a gaseous mixture of equilibrium increases, the equilibrium constant:
  - a. remains constant
  - b. increase
  - c. decrease
  - d. varies
10. The resultant of a 6N force and 8N force acting at right angle to each other is of magnitude:
  - a. 14 N
  - b. 2 N
  - c. 10 N
  - d. 48 N
11. Vertebrate with one occipital condyle is:
  - a. pigeon
  - b. frog
  - c. monkey
  - d. rabbit
12.  $Na^+$  is isoelectronic with:
  - a. Mg
  - b. He
  - c. Fe
  - d. Ne
13. When a wave is reflected while entering from rarer medium to a denser medium, then at the boundary, the reflected wave undergoes a phase change of:
  - a.  $0^\circ$
  - b.  $180^\circ$
  - c.  $90^\circ$
  - d.  $45^\circ$
14. Fruit juices are often sold in aluminum cans. What is the most important reason?
  - a. aluminum can be recycled
  - b. Aluminum is light
  - c. Aluminum is cheaper
  - d. Aluminum is resistant to corrosion.

15. The magnitude of the resultant of two forces is  $F$ . The magnitude of each force is  $F$ . The angle between the forces must be:  
 a.  $30^\circ$                       b.  $60^\circ$                       c.  $45^\circ$                       d.  $120^\circ$
16. The flower of family gramineae (poaceae) contains two scales below-ovary. Which are called:  
 a. glumes                      b. lemma & palea                      c. lodicules                      d. rachilla
17. Consider an equation:  $N_2 + O_2 \rightarrow 2NO$ . The partial pressure (in atm) of  $N_2$  under normal atmospheric pressure is:  
 a. 0.05                      b. 0.25                      c. 0.35                      d. 0.45
18. In the case of AC: average value of current is:  
 a.  $\sqrt{2}$  times the maximum                      b.  $\frac{1}{\sqrt{2}}$  times the maximum current  
 c. Zero                      d.  $\frac{1}{2}$  times maximum current
19. The opening between right atrium and right ventricle is guarded by a:  
 a. semi lunar valve                      b. tricuspid valve                      c. bicuspid                      d. semicircular valve
20. Compounds which tend to donate electron pair are known as lewis bases or nucleo-philes. Which one of the following is not a Lewis base?  
 a.  $CH_3-NH_2$                       b.  $PH_3$                       c.  $AlCl_3$                       d.  $H_2O$
21. 1 atomic mass unit (amu) in term of energy is nearly equal to:  
 a. 931 KeV                      b. 931 MeV                      c. 39 MeV                      d. 139 KeV
22. The total of all the allele in a population is called:  
 a. genetic drift                      b. genotype                      c. gene pool                      d. gene mutation
23. Which of the following reagent can be used to identify  $Ni^{+2}$  ions in solution?  
 a. Ethylenediamine                      b. potassium ferrocyanide  
 c. dimethyl glyoxime                      d. potassium permanganate
24. The maximum KE of emitted photoelectrons depends on:  
 a. intensity of the incident light                      b. frequency of the incident light  
 c. temperature of the photosensitive surface                      d. None of the above
25. Which one of the following in glycolysis is hydrogen carrier?  
 a. ADP                      b. PGAL                      c. DPGA                      d. NAD
26. Which one of the following molecules does not contain nitrogen?  
 a. Aniline                      b. Pyridine                      c. Hydrazine                      d. Naphthalene
27. The half-life of a radioactive source is 2.3 days. Its decay constant per day will be:  
 a. 0.1                      b. 0.2                      c. 0.3                      d. 2.3
28. The cells that play vital role in the differentiation of various body parts are called:  
 a. Ectodermal cells                      b. Mesodermal cells                      c. Endodermal cells                      d. All of the above
29. Alternation of generations in plants is regarded a mechanism for:  
 a. achieving haploidy                      b. promoting survival                      c. producing diploidy                      d. having no significance
30. 'Blow great trumpet / horn' refers to:  
 a. boast                      b. violent flow of winds                      c. celebrate enthusiastically                      d. eruption of war



31. What product is obtained when methyl magnesium chloride reacts with ammonia?  
a. methane                      b. methylamine                      c. Ethylamine                      d. Methyl chloride
32. The total energy of a H-atom in its ground state is:  
a.  $-Ve$                       b.  $+Ve$                       c. Zero                      d. None
33. The individual with hare-lip shows which of the following condition?  
a. Cleft palate                      b. Polydactyly                      c. Hard-palate                      d. Microcephaly
34. Receptors sensitive to smell are:  
a. Mechanical                      b. chemical                      c. photo                      d. geo
35. Which of the following cannot be displaced from their salt solution by cell:  
a. Ag                      b. Au                      c. Pt                      d. Zn
36. Uncertainty principle can be expressed as:  
a.  $\Delta p \Delta x = h$                       b.  $\Delta E \Delta t = h$                       c. both (a) & (b)                      d. None
37. Which hormone prepares the body for situations of stress and emergency?  
a. Adrenaline                      b. Nor adrenaline                      c. Thyroxin                      d. Insulin
38. For atomic numbers given below which pair of elements will have the same chemical properties?  
a. 13,22                      b. 3,11                      c. 4,24                      d. 2,4
39. Many ancient civilizations \_\_\_\_\_ on the banks of major rivers.  
a. dashed                      b. flourished                      c. sprawled                      d. succeeded
40. The frequency of the fundamental mode of a string stretched by a tension  $T$  and having mass  $m$  and length  $l$  is given by:  
a.  $f = \frac{1}{2} \sqrt{\frac{T}{ml}}$                       b.  $f = \frac{1}{2l} \sqrt{\frac{T \times l}{m}}$                       c.  $f = \frac{1}{2l} \sqrt{\frac{T}{m}}$                       d.  $f = \frac{l}{2} \sqrt{\frac{T}{m}}$
41. Which of the following type of cytochromes is common in photosynthesis and respiration?  
a. Cyt "a"                      b. Cyt "a<sub>3</sub>"                      c. Cyt "b"                      d. Cyt "c"
42. 74g of calcium hydroxide will yield  $OH^-$  ions:  
a. 17 g                      b. 34g                      c. 51 g                      d. 40g
43. The first law of thermodynamics can be expressed mathematically as:  
a.  $\Delta Q = \Delta u + \Delta w$                       b.  $\Delta U = \Delta w + \Delta Q$                       c.  $\Delta Q = \Delta C + \Delta t$                       d.  $\Delta S = \frac{\Delta Q}{\Delta t}$
44. Which of the following pairs have same electronic structure?  
a. Ar &  $Cl^-$                       b. Ca & Ar                      c. Mg &  $Na^+$                       d. Ag & Sn
45. What will be the effect on the speed of transverse waves on a string if the tension in the string remains constant but the diameter of the string becomes double?  
a. Remains constant                      b. Becomes Half                      c. becomes double                      d. Becomes four times
46. Peptide bond is formed between:  
a. Hydrogen groups of adjacent amino acid                      b. functional group of the amino acid  
c. carboxyl group and amino group                      d. functional group and hydrogen group of adjacent amino acid.
47. The oxidation number of chlorine in  $Ca(ClO_3)_2$  is:  
a. -1                      b. +3                      c. +5                      d. -6

48. A particle is moving in a circle of radius  $r$  with constant angular speed  $\omega$ . Its acceleration directed towards the center of the circle is:
- a.  $\frac{\omega}{r}$       b.  $\frac{\omega^2}{r}$       c.  $\omega^2 r$       d.  $\omega r^2$
49. ....
50. Anticodon of AUG will be:
- a. AUG      b. UAC      c. CCA      d. GGA
51. In glass manufacturing process annealing is done for the prevention of:
- a. Air bubbles      b. impurities      c. Strain      d. shining
52. A string passes over a smooth pulley and carries a 3kg mass at one end and a 5kg mass at the other end. The acceleration of the masses is:
- a.  $2.45 \text{ ms}^{-2}$       b.  $0.25 \text{ ms}^{-2}$       c.  $0.25 \text{ ms}^{-2}$       d.  $2.8 \text{ ms}^{-1}$
53. Which of these is a fresh water sponge?
- a. sycon      b. Leucosolenia      c. Spongilla      d. euplectella
54. If 28.0g nitrogen gas is reacted with 8.0g of hydrogen gas to form Ammonia the limiting reactant among the two will be:
- a.  $\text{N}_2$       b.  $\text{H}_2$       c. both (a) & (b)      d. No of these
55. The unit of  $K_c$  for the system  $\text{N}_2\text{O}_{4g} \rightleftharpoons 2\text{NO}_{2g}$  is:
- a. dimension (i.e with no unit)      b.  $\text{mole dm}^3$       c.  $\text{mole dm}^{-3}$       d.  $\text{mole}^2 \text{ dm}^3$
56. Rest mass energy of an electron is:
- a. 0.511 MeV      b. 1 MeV      c.  $8.0 \times 10^{14} \text{ J}$       d. None of above
57. In earthworm much Enzymes are present
- a. Intestinal caeca      b. Typhlosole      c. Esophagus      d. Pharyngeal mass
58. Which one is an auxiliary?
- a. Did      b. at      c. on      d. by
59. What is the trade name of tetrafluoro ethylene polymer?
- a. Polystyrene      b. Bakelite      c. nylon      d. teflon
60. As compared to a stationary clock a moving clock clicks:
- a. Slower      b. faster      c. Same rate as stationary clicks      d. Clicks negative time
61. Net change of entropy in the carnot cycle is:
- a. Zero      b. Positive      c. Negative      d. None of above
62. Which of the following has the high energy photon?
- a. Visible light      b. X-rays      c. Ultraviolet light      d.  $\gamma$  - rays
63. In a closed room of  $1000 \text{ m}^3$  a perfume boiler is opened up. The room develops smell. This is due to which property of gases?
- a. diffusion      b. viscosity      c. density      d. none of the above
64. The air we \_\_\_\_\_ today has many harmful elements in it.
- a. breathe      b. are breathing      c. breath      d. have breathed
65. fibrinogen is necessary for:
- a. metabolism      b. Blood clotting      c. reproduction      d. respiration

66. two boats moving parallel in the same direction:  
 a. Will be pulled towards each other  
 b. Will be pulled away from each other  
 c. Will have no effect on each other  
 d. none
67. A well stoppered thermos flask containing some ice cubes is an examples of:  
 a. closed system  
 b. open system  
 c. isolated system  
 d. None of above
68. 'Homicide'  
 a. is a poison  
 b. means killing members of one's species  
 c. means 'murder'  
 d. means 'the murderer of one's own family'
69. All the flowers come at the same level due to equal size of their pedicels in:  
 a. corymbs  
 b. umbel  
 c. catking  
 d. panicle
70. Two parallel wires are carrying current in opposite direction. These two wires:  
 a. will attract each other  
 b. will repel each other  
 c. will have no effect on each other  
 d. None of the above
71. Which of the following is NOT correct in case of carboxylic acids?  
 a. they are polar molecules  
 b. they form H-bonds  
 c. they are stronger than mineral acids  
 d. they have higher boiling points than corresponding alcohols.
72. She dresses with great \_\_\_\_\_ and that is how she impresses people.  
 a. pride  
 b. outrageousness  
 c. ostentation  
 d. panache
73. A living tissue which in addition to its regular function also provides support to plants is:  
 a. Xylem  
 b. Collendryma  
 c. sclerenchyma  
 d. Parenchyma
74. The applied force which the solid can withstand without breaking is called:  
 a. stiffness of solids  
 b. strength of solid  
 c. ductility of solid  
 d. Toughness of solid
75. When ethanol is treated with fehling's solution. It gives a precipitate of:  
 a. Cu  
 b. CuO  
 c.  $\text{Cu}_2\text{O}$   
 d.  $\text{Cu}_2\text{O} + \text{Cu}_2\text{O}_3$
76. Opening and closing of stomata is controlled by which of the following factor(s)?  
 a. Sugar  
 b. pH  
 c. Potassium  
 d. All of the above
77. As the temperature of black body is increased the wavelength of maximum intensity radiation:  
 a. will shift towards the longer wavelength  
 b. will shift towards the shorter wavelength  
 c. will not changed  
 d. none of these
78. The Cl atom attached to benzene ring is:  
 a. m-directing  
 b. o-directing  
 c. o- & p-directing & deactivating  
 d. o- & p-directing & activating
79. Control centre of speech is:  
 a. Medulla oblongata  
 b. Diencephalons  
 c. Cerebrum  
 d. cerebellum
80. Decay of one radioactive atom per second is equal to:  
 a. One curie  
 b. one Becquerel  
 c. One half life  
 d. None of above
81. Acetic anhydride is obtained from acetyl chloride in the reaction with:  
 a.  $\text{P}_2\text{O}_5$   
 b.  $\text{H}_2\text{SO}_4$   
 c.  $\text{CH}_3\text{COONa}$   
 d.  $\text{CH}_3\text{COOH}$
82. It is very difficult to relax while working with their new boss because he is a hard \_\_\_\_\_  
 a. worker  
 b. hearted  
 c. taskmaster  
 d. nut crack

83. Filter feeders extract food particles from:  
a. Water                      b. soil                      c. Air                      d. Blood
84. The ecological factor which does NOT change from place to place is:  
a. Precipitation                      b. Temperature                      c. Gravity                      d. Light
85. Fast neutrons can be slowed down by collisions with:  
a. Electrons                      b. Protons                      c. Phonons                      d. Photons
86. Which form of matter possesses higher magnitude of internal energy?  
a. Gaseous matter                      b. Solid matter                      c. Liquid matter                      d. all have same magnitude
87. On the basis of which of the following ratio we can prove law of independence assortment?  
a. 9:3:3:1                      b. 9:3:4                      c. 1:2:1                      d. 2:1:1
88. If a shell explodes in air its fragments fly in different directions. The total momentum of the fragments:  
a. Increase                      b. decreases                      c. remains constant                      d. none of the above
89. A bottle of dry  $NH_3$  and a bottle of dry HCl connected through a long tube are opened simultaneously of both ends. The white  $NH_4Cl$  ring formed will be:  
a. at the center of the tube                      b. near the  $NH_3$  bottle  
c. near the HCl bottle                      d. throughout the length of the same tube
90. Photorespiration occurs when:  
a. stomata are opened                      b. day is humid  
c. concentration of  $CO_2$  inside leaf is high                      d. Concentration of  $O_2$  inside leaf is high
91. ....
92. When  $\beta$  - particle is emitted from lead  $_{82}Pb^{214}$ . The mass number and charge number of bismuth formed is:  
a.  $_{83}Bi^{212}$                       b.  $_{81}Bi^{210}$                       c.  $_{83}Bi^{210}$                       d. None of these
93. Acetadehyde on oxidation by  $Na_2Cr_2O_7/H_2SO_4$  gives:  
a.  $CH_3COOH$                       b.  $C_2H_5OH$                       c. OHC.OHC                      d. None of above
94. In geneaction the gene that mark the expression of another gene is formed as:  
a. Hypostatic                      b. Epistatic                      c. Hemistatic                      d. Neostatic
95. IF a material particle starts motion with speed equal to the speed of light, then mass of the moving particle will:  
a. Remain constant                      b. Become zero                      c. become equal to rest mass of particle                      d. Become infinite
96. Which is the correct formula of ammonium carbamate  
a.  $H_2NCONH_2$                       b.  $NH_4COONH_4$                       c.  $H_2NCOONH_2$                       d.  $NH_2COONH_4$
97. AUTOCRACY is the government of:  
a. One person with absolute power                      b. lawyers fraternity  
c. Elected representatives of the masses                      d. intelligentsia
98. ....
99. Transition from  $n = 4, 5, 6, \dots$  To  $n = 3$  in hydrogen spectrum gives:  
a. Balmer series                      b. Lyman series                      c. paschen series                      d. plund series
100. 'The Bottom line is that we cannot ignore the cultural aspect in education'. The underlined expression means:  
a. most important thing                      b. the last line in a essay                      c. conclusion                      d. trend



101. Green house effect is NOT produced by the abundance of the gas called  
 a. Methane                      b.  $CO_2$                       c. Nitrous oxide                      d. Sulphur dioxide
102. The range of a projectile is the same for two angles which are mutually:  
 a. orthogonal                      b. supplementary                      c. complementary                      d. sum is  $45^\circ$
103.  $CH_3CH_2I$  reacts with dry  $Ag_2O$  to give:  
 a. Diethyl ether                      b. Ethane                      c. Ethanal                      d. Ethanol
104. The step in glycolysis in which energy transfer is not involved is:  
 a. Glucose phosphate  $\rightarrow$  fructose diphosphate                      b. Fructose diphosphate  $\rightarrow$  DAP  
 c.  $PGAL \rightarrow PGAP$                       d.  $PGAP \rightarrow PGA$
105. The vectoral form of centripetal force is:  
 a.  $F_c = \frac{mv^2}{r}$                       b.  $\vec{F}_c = \frac{mv^2}{r} \hat{\gamma}$                       c.  $\vec{F}_c = \frac{mv^2}{r^2} \hat{\gamma}$                       d.  $\vec{F}_c = \frac{mv^2}{r^2} \hat{\gamma}$
106. His fondness for \_\_\_\_\_ makes his writings difficult to understand because most readers don't know the newly invented words.  
 a. archaic words                      b. sking                      c. advanced words                      d. neologisms
107. Which one among the following is in fact a fruit, but is available at vegetable shop?  
 a. Capsicum annum                      b. Solanum tuberosum                      c. Medicago denticulate                      d. bauhinia variegata
108. A 50 m coil carries a current of 2 ampere. The energy stored in magnetic field is:  
 a. 10 joule                      b. 0.1 joule                      c. 0.01 joule                      d. 1.0 joule
109. In an ecosystem having four tropic levels, The amount of energy fixed at producers level is 23197 kcal. About how much energy will be fixed by the primary carnivores?  
 a. 2317 Kcal                      b. 232 kcal                      c. 1564 kcal                      d. None of above
110. A body of mass 1 kg is suspended from a balance in the elevator which is accelerating downward with an acceleration of  $4ms^{-1}$  the reading of the balance will be:  
 a. 9.8 N                      b. 13.8 N                      c. 5.8 N                      d. Zero
111. The equilibrium constant for a reaction  $N_2(g) + O_2 \rightleftharpoons 2NO$  is  $4 \times 10^{-4}$  at 2000k. in the presence of catalyst. The equilibrium is attained 10 times faster. The equilibrium constant in presence of catalyst at 2000k is:  
 a.  $10 \times 10^{-4}$                       b.  $4 \times 10^{-4}$                       c.  $40 \times 10^{-4}$                       d.  $4 \times 10^{-2}$
112. The radio waves of constant amplitude are called:  
 a. Modulated waves                      b. Carrier waves                      c. Standing waves                      d. Rectified waves
113. The word SEISMOLOGY stands for:  
 a. An instrument for detecting earthquakes                      b. Study of sea creatures  
 c. A branch of Astrology                      d. Scientific study of earthquakes
114. The lowest vapor pressure is exerted by:  
 a. Water                      b. Kerosene oil                      c. Mercury                      d. rectified spiril
115. ....
116. Blood cells are produced by:  
 a. Liver                      b. Spleen                      c. Bone marrow                      d. Heart
117. Lowering in vapour pressure is the highest for:  
 a. 0.2 M urea                      b. 0.1 M Glucose                      c. 0.1 M  $MgSO_4$                       d. 0.1 M  $BaCl_2$

118. The process in which heat neither enters nor leaves the system but still the temperature of the system changes is:  
 a. Isobaric process      b. Isothermal process      c. Adiabatic process      d. Isochoric process
119. Which of the following reaction show nucleophilic substitution of alkyl halide  $R-X$ ?  
 a.  $RX + H_2 \rightarrow RH + HX$       b.  $RX + KCN \rightarrow RCN + KX$   
 c.  $2RX + 2Na \xrightarrow{Heat} R-R + 2NaX$       d.  $R-X + Mg \xrightarrow{Heat} RMgX$
120. Organs of locomotion in earth worm are:  
 a. Papillae      b. Setae      c. Pseudopodia      d. Cuticle
121. A metal form strong base salts and stable carbonates. The metal is:  
 a. Transition metal      b. Alkali metal      c. Alkaline earth metal      d. None of above
122. Gonorrhea is a sex disease caused by:  
 a. Bacteria      b. Virus      c. Parasite      d. None of above
123. The resolving power of the lens can be improved by using:  
 a. Lens of short focal length      b. Lens of large focal length  
 c. Light of short wavelength      d. Light of large wavelength
124. Which of the following oxy acids of chlorine is least oxidizing in nature?  
 a.  $HOCl$       b.  $HClO_2$       c.  $HClO_3$       d.  $HClO_4$
125. Which one is non-polar but contains polar bonds:  
 a.  $HCl$       b.  $HF$       c.  $H_2O$       d.  $CO_2$
126. The building with numerous arches looked \_\_\_\_\_ in the moonlight.  
 a. Brightly      b. Splendidly      c. mysteriously      d. magnificent
127. Which of the following is an inactive enzyme without its cofactor?  
 a. Coenzyme      b. Apoenzyme      c. Holoenzyme      d. Denatured enzyme
128. If the length of second pendulum becomes four times, then its time period will become:  
 a. Four times      b. Two times      c. Half      d. one fourth
129. Which of the following is correct?  
 a. Molecularity of a reaction is same as the order of reaction  
 b. in some cases molecularity of a reaction is the same as order of reaction.  
 c. molecularity of reaction is more than order of reaction      d. all are correct
130. Liaba is trying to determine the percentage of protein in beans because she is a:  
 a. Biochemist      b. Microbiologist      c. Physiologist      d. Mycologist
131. A close surface contains equal and opposite charges. The net electric flux through the close surface is:  
 a. maximum      b. minimum      c. Zero      d. positive as well as negative
132.  $O_2$  gas is chemically inert at room temperature because:  
 a. Atoms in the  $O_2$  molecules are held by multiple bonds      b.  $O=O$  bonds are strong  
 c. The amount of metal in the anode      d. All of the above.
133. The emf of a galvanic cell can be calculated from:  
 a. The size of the electrode      b. The pH of the solution  
 c. The amount of metal in the anode      d. The  $E^0$  values of the half cell.
134. Which of these are carries of genetic information?  
 a. rRNA      b. mRNA      c. DNA      d. Nucleotides

135. Critical angle of a medium depends upon the:  
 a. Speed of light  
 b. wavelength of light  
 c. Refractive index of the medium  
 d. intensity of light
136. The phase change of  $180^\circ$  is equivalent to a path difference:  
 a.  $\frac{\lambda}{2}$   
 b.  $\lambda$   
 c.  $2\lambda$   
 d.  $4\lambda$
137. The constancy of e/m ratio of electron shows that:  
 a. Electron mass is  $1/1837$  of proton  
 b. Electrons are universal particles of all matter  
 c. Electrons are produced in discharge  
 d. None of the above
138. Genome of which of the following consists of single molecule of DNA?  
 a. HAV  
 b. HBV  
 c. HCV  
 d. HIV
139. The unit of conductance is:  
 a. Ohm  
 b. Ohm - meter<sup>-1</sup>  
 c. Ohm - meter  
 d. mho
140. At what place, the motion of the bob of simple pendulum will be the slowest?  
 a. At poles of earth  
 b. At equator of earth  
 c. Anywhere on the surface of earth  
 d. None of these
141. \_\_\_\_\_
142. Lithotripsy is a technique to:  
 a. Remove kidney stones without surgery  
 b. Remove kidney stones with surgery  
 c. Treat kidney with medicines  
 d. Remove appendix
143. In time of war, governments do things which are E. pedient. The underlined word means:  
 a. Endorsed by war council  
 b. Concomitant  
 c. Need of hour  
 d. useful but not necessarily right
144. Which one of the following plants feeds on water mites?  
 a. Nepenthes  
 b. utricularia  
 c. Dionea  
 d. Drosera
145. If the resultant of two vectors each of magnitude A is the of magnitude A the angle between the vectors will be:  
 a.  $30^\circ$   
 b.  $45^\circ$   
 c.  $60^\circ$   
 d.  $120^\circ$
146. 2% solution by weight of sodium chloride solution is prepared. The molality of the solution is:  
 a. 0.34 molal  
 b. 0.25 molal  
 c. 2 molal  
 d. 0.02 molal
147. \_\_\_\_\_
148. Newton's rings are formed due to:  
 a. Reflection of light  
 b. Interference of light  
 c. Diffraction of light  
 d. Polarization of light
149. For a reversible reaction to reach on equilibrium state the reaction said to be carried out in:  
 a. Glass vessel  
 b. Iron vessel  
 c. Open vessel  
 d. closed vessel
150. Goiter is caused by deficiency of:  
 a. Sodium in water  
 b. Calcium in water  
 c. Iodine in water  
 d. Sugar in water
151. The current gain of transistor having collector current of 10 mA and the base current of  $40\mu A$  is:  
 a. 2.5  
 b. 25  
 c. 250  
 d. 2500
152. Which of the following is a cycloalkane?  
 a.  $C_6H_{14}$   
 b.  $C_6H_{12}$   
 c.  $C_6H_{10}$   
 d.  $C_6H_8$
153. Which one of the following is found in plant cells only?  
 a. Peroxisome  
 b. Lysosome  
 c. Glyoxisome  
 d. Ribosome

154. LASER light is the result of:  
a. Spontaneous emission    b. Ordinary emission    c. Absorption of radiation    d. Stimulated emission
155. Neuron that carries messages from sense organ to the central nervous system is:  
a. Afferent    b. Efferent    c. Associative    d. Interneuron
156. The number of photoelectrons emitted per second from the metal surface depends upon:  
a. Intensity of light    b. Frequency of light    c. Wavelength of light    d. speed of light
157. Reason for alkali metals to be soft is that:  
a. They are less metallic in nature    b. There is only one valency  
c. They are not having close packed structures    d. They have high I.E
158. If there coplanar force acting on a body keep it in equilibrium then these force are:  
a. Concurrent    b. Non-concurrent    c. Parallel    d. Anti-parallel
159. If water samples are taken from sea river, clouds, lakes or snow, they will be found to contain hydrogen and oxygen in the ratio of 1:8 by weight this indicates the law of:  
a. Definite proportion    b. Multiple proportion    c. Reciprocal proportion    d. None of above
160. Corpuscular animals are active during:  
a. Night    b. day    c. Twilight    d. Spring
161. The dimensions of angular acceleration are:  
a.  $[L^{-1}T^{-1}]$     b.  $[LT^{-2}]$     c.  $[T^{-2}]$     d.  $[L^2T^{-2}]$
162. Red tides in oceans are produced by:  
a. Diatoms    b. Dino flagellates    c. Water molds    d. Myxomycota
163. The resistance of three arms of the balanced wheat stone bridge are 50 ohm. The resistance in the 4<sup>th</sup> ohm:  
a. 25ohm    b. 50 ohm    c. 75 ohm    d. 100 ohm
164. If the pressure and temperature (k) of two liters of CO<sub>2</sub> are doubled the volume of CO<sub>2</sub> would become:  
a. 5 liters    b. 4 liters    c. 8 liters    d. 2 liters
165. The cartilage present in trachea is:  
a. Fibrous    b. Hyaline    c. Elastic    d. Neurotic
166. Which of the following is conservative field:  
a. Gravitational field    b. Electric field    c. Magnetic field    d. All such fields
167. Rabbits, pabulus, rats grasshoppers and grasses constitute a:  
a. Habitat    b. Biome    c. Community    d. Population
168. How many atoms are contained in one mole of  $Ca(OH)_2$ ?  
a.  $5 \times 6.02 \times 10^{23}$  atoms    b.  $30 \times 6.02 \times 10^{23}$  atoms  
c.  $3 \times 6.02 \times 10^{23}$  atoms    d.  $6 \times 6.02 \times 10^{23}$  atoms
169. The man sitting next to me on the plane was nervous because he \_\_\_\_\_ before.  
a. Had not flown    b. did not fly    c. has not flown    d. has not been flown
170. Size of the flower of chrysanthemum may be enlarged by removing:  
a. All leaves    b. A few leaves  
c. All branches except one    d. All floral bud except one.

X=====X

MEDICAL ENTRANCE TEST 2007

1. The students were \_\_\_\_\_ and the teacher, therefore, did not take the class.  
a. Only few                      b. A few                      c. Not much                      d. Few
2. The largest demand of energy is generally fulfilled by  
a. Hydroelectric power                      b. Nuclear energy                      c. Solar energy                      d. Fossil fuels
3. The magnitude of  $\hat{i} \cdot (\hat{j} \times \hat{k})$  is  
a. 0                      b. 1                      c. -1                      d. 2i
4. An atom has a net charge of -1, it has 18 electrons and 20 neutrons. Its mass number is  
a. 38                      b. 39                      c. 37                      d. 20
5. Which one of the following bond is broken first in glycolysis to release the energy?  
a. Glycosidic                      b. Peptide                      c. Ester                      d. None of these
6. Teeth adapted for cutting are  
a. Canines                      b. Incisors                      c. Premolar                      d. Molars
7. Which one of the following isotopes of natural uranium undergoes reaction with slow neutron?  
a.  ${}_{92}\text{U}^{235}$                       b.  ${}_{92}\text{U}^{238}$                       c.  ${}_{92}\text{U}^{234}$                       d.  ${}_{92}\text{U}^{239}$
8. Conc:  $\text{H}_2\text{SO}_4$  is added to a mixture of  $\text{K}_2\text{Cr}_2\text{O}_7$  and metal chloride in solid state. Brown vapors are formed. Which one is the correct formula?  
a.  $\text{CrOCl}_2$                       b.  $\text{COCl}_2$                       c.  $\text{CrO}_2\text{Cl}_2$                       d.  $\text{CrCl}_3$
9. A person who hates other people and avoids human society is known as  
a. Misanthrope                      b. Inhuman                      c. Sadist                      d. Misogynist
10. The ionization energy of hydrogen atom is 13.6ev. the ionization potential required will be  
a. 4.9 volt                      b.  $8.5 \times 10^{-19}$  volt                      c. 3.4 volt                      d. 13.6 volt
11. Which of the following is not correct  
a. Xe is the most reactive among the rare gases                      b. He is an inert gas  
c. Radon is obtained from decay of radium                      d. The most abundant rare gas found in atmosphere is He
12. Distillation under reduced pressure is used to purify liquids which  
a. Are explosive                      b. Are highly volatile  
c. Decompose at their boiling point                      d. Have high boiling point
13. AMICABLE is nearly opposite in meaning to  
a. Hostile                      b. Indispensable                      c. Inimical                      d. Amiable
14. It looks like a single flower but it is in fact an inflorescence called  
a. Panicle                      b. Typical receme                      c. Compound umbel                      d. Capitulum
15. Two waves of the same frequency and amplitude, traveling in opposite direction along the same path will form  
a. Electromagnetic waves                      b. Micro waves                      c. Standing waves                      d. Sound waves
16.  $\text{NH}_3$  has higher boiling point than expected because  
a. With water it forms  $\text{NH}_4\text{OH}$                       b. It has strong inter molecular hydrogen bonds  
c. It has strong inter-molecular covalent bonds                      d. Its density decreases on freezing
17. Mangroves are  
a. Xerophytes                      b. Mesophytes                      c. Heliophytes                      d. Halophytes



18. In simple A.C. inductive circuit
  - a. The voltage leads the current by  $90^\circ$
  - b. The voltage lags behind the current by  $90^\circ$
  - c. The current leads the voltage by  $90^\circ$
  - d. The current and voltage are in phase
19. The phenomenon of mutual induction is practically used in
  - a. Transformer
  - b. Generator
  - c. Galvanometer
  - d. Avometer
20. If  $K_c$  is small, it indicates that the equilibrium occurs
  - a. At a low product concentration
  - b. Only with the help of catalyst
  - c. At a high product concentration
  - d. None of these
21. Four chambers heart is found in
  - a. Lizard
  - b. Fish
  - c. Crocodile
  - d. None of above
22. The color coding of carbon resistor is such that the first band is green, the second band is yellow, the third band is red and the fourth band is golden, the value of resistance is
  - a. 4500 ohm with 10% tolerance
  - b. 5400 ohm with 10% tolerance
  - c. 5400 ohm with 5% tolerance
  - d. 4500 ohm with 5% tolerance
23. Metallic carbide on the treatment with water gives a colorless gas which burns readily in air and gives a white precipitate with  $\text{AgNO}_3 + \text{NH}_4\text{OH}$ . The gas is
  - a.  $\text{CH}_4$
  - b.  $\text{C}_2\text{H}_2$
  - c.  $\text{C}_2\text{H}_4$
  - d.  $\text{C}_2\text{H}_6$
24. His driving is rather \_\_\_\_\_. He moves smoothly and then all of a sudden becomes negligent
  - a. Careless
  - b. Erratic
  - c. Relentless
  - d. Carefree
25. Which one of the following is a homeothermic animal
  - a. Uromastix
  - b. Salamander
  - c. Sea horse
  - d. Kangaroo
26. An object in a satellite orbiting around the earth is weightless because
  - a.  $g = 0$
  - b. is moving with escape velocity
  - c. is too far away from the earth
  - d. satellite is falling freely
27. Transition elements are less reactive because of
  - a. High ionization energy
  - b. High heat of vaporization
  - c. Less heat of hydration of ions
  - d. All are correct
28. Vitrofertilization takes place in zoo:
  - a. River
  - b. Sea
  - c. Land
  - d. Laboratory hardware
29. Speed of sound is independent of
  - a. Density of medium
  - b. Temperature of medium
  - c. Pressure of medium
  - d. Elasticity of medium
30. The number of legs in scorpion are
  - a. One pair
  - b. Two pair
  - c. Three pairs
  - d. Four pairs
31. The S.I Unit of electromotive force is
  - a. Joule per coulomb
  - b. Joule per second
  - c. Coulomb per volt
  - d. Volt per ampere
32. In the action of  $\text{HNO}_3$  on metals, the evolution of  $\text{NO}_2$  is favored by
  - a. Conc.  $\text{HNO}_3$
  - b. Dilute  $\text{HNO}_3$
  - c. Fuming  $\text{HNO}_3$
  - d. Very dilute  $\text{HNO}_3$
33. Most people think \_\_\_\_\_ is an essential feature of modern life
  - a. The television
  - b. A television
  - c. The TV
  - d. Television
34. Detritivore feeds on
  - a. Plants
  - b. Animals
  - c. Organic debris
  - d. Bacteria

35. Lithium is generally used as an electrode in high energy density batteries, because  
a. It is the lightest metal  
b. It has high negative reduction potential  
c. It is quite reactive  
d. It does not corrode easily
36. In the following pairs, one organelle is involved in the formation of other except  
a. Golgi bodies – lysosomes  
b. Nucleus – ribosome  
c. Endoplasmic reticulum – peroxisome  
d. Endoplasmic reticulum – Golgi bodies
37. At constant temperature, if the volume of the given mass of a gas is doubled, then the density of the gas becomes  
a. Double  
b. One half  
c. One quarter  
d. Four times
38. Calcium super phosphate is  
a.  $\text{Ca}(\text{H}_2\text{PO}_4)_2$   
b.  $\text{Ca}_3(\text{PO}_4)_2$   
c.  $\text{Ca}(\text{H}_2\text{PO}_4)_2 + 2(\text{CaSO}_4 \cdot 2\text{H}_2\text{O})$   
d.  $\text{CaHPO}_4 + 2\text{CaSO}_4$
39. Which one of the following reversible reactions cannot be affected by pressure  
a.  $\text{H}_2(\text{g}) + \text{I}_2(\text{g}) \rightarrow 2\text{HI}(\text{g})$   
b.  $\text{N}_2(\text{g}) + 3\text{H}_2(\text{g}) \rightarrow 2\text{NH}_3(\text{g})$   
c.  $\text{PCl}_5(\text{g}) \rightarrow \text{PCl}_3(\text{g}) + \text{Cl}_2(\text{g})$   
d.  $2\text{NO}(\text{g}) + \text{O}_2 \rightarrow 2\text{NO}_2(\text{g})$
40. A cross between F1 hybrid with either of parents is called  
a. Back cross  
b. Test cross  
c. Reverse cross  
d. None of above
41. A projectile is throw horizontally from a 490m high cliff with a velocity of  $10\text{ms}^{-1}$ , the time taken by projectile to reach the ground is  
a. 2.5 sec  
b. 7.5 sec  
c. 5.0 sec  
d. 10 sec
42. Our plays have been very capricious in their performance. The underlined word means  
a. Wonderful  
b. Unpredictable  
c. Adventurous  
d. Tricky
43. Who is considered to be the father of genetics?  
a. Weisman  
b. Bateson  
c. Mendel  
d. Morgan
44. The increase in temp of intrinsic semiconductor will  
a. Increase its conductivity  
b. Decrease its conductivity  
c. Not effect conductivity  
d. None of these
45. Stability of ionic compound is due to  
a. Electro negativity  
b. Lattice energy  
c. Sublimation energy  
d. Electron affinity
46. A zero order reaction is one whose rate is independent of  
a. Temp of the reaction  
b. Concentration of the reactants  
c. Concentration of the products  
d. Material of the vessel in which the reaction is carried out.
47. Which one of them is a true fish?  
a. Cuttle fish  
b. Silver fish  
c. Jelly fish  
d. Sea horse
48. The excited state of an atom which can persist for unusual longer time is called  
a. Metastable state  
b. Ground state  
c. Excited state  
d. Normal state
49. The widely used PVC is polymerized product of  
a.  $\text{CH}_2 = \text{CH}_2$   
b.  $\text{CH}_2 = \text{CCl}_2$   
c.  $\text{ClCH}_2 - \text{CH}_2\text{Cl}$   
d.  $\text{CH}_2 = \text{CHCl}$
50. If the distance b/w the two charged particles is halved, the Coulomb's force b/w them becomes  
a. Half  
b. One quarter  
c. Double  
d. Four times
51. The neutralization of a strong acid by a strong base liberates an amount of energy per mole of  $\text{H}^+$  ion that  
a. Depends upon which acid and base are involved  
b. Depends upon the temperature at which the reaction takes place  
c. Depends upon which catalyst is used  
d. Is always the same

52. Going to \_\_\_\_\_ is considered vulgar by the elders of our village.  
 a. The cinema      b. Cinema      c. A cinema      d. Cinemas
53. The main excretory organs in cockroach are  
 a. Flame cells      b. Cilia      c. Nephridia      d. Malpighian tubes
54. The phenomenon used for producing emf in coil of generator is  
 a. Mutual induction      b. Self induction  
 c. Electrostatic induction      d. Electromagnetic inductions
55. IUPAC name of the compound  $\text{CH}_3 - \text{CH} - \text{CH}_2\text{CH}(\text{OH}) - \text{CH}_3$   
 $\begin{array}{c} | \\ \text{CH}_2 \\ | \\ \text{CH}_3 \end{array}$   
 a. 4-methyl-3-hexanol      b. Heptanol      c. 4-methyl-2-hexanol      d. 4-ethyl pentanol-2
56. Man reproduction is  
 a. Mono estrous      b. Di estrous      c. Tri estrous      d. Poly estrous
57. Microsporum causes  
 a. Food spoilage      b. Decay of leather goods      c. Dandruff      d. Wood rot
58. When a light signal travels along the length of the optical fibre, the power lost by it, is due to  
 a. Refraction      b. Reflection      c. Diffraction      d. Scattering & absorption
59. Which of the following ions has largest heat of hydration  
 a.  $\text{Ba}^{+2}$       b.  $\text{K}^{+1}$       c.  $\text{Li}^{+1}$       d.  $\text{Be}^{+2}$
60. How many ATPs are produced during non cyclic Photophosphorylation?  
 a. 2      b. 4      c. 6      d. 8
61. Net change of entropy in the Carnot's cycle is  
 a. Zero      b. Positive      c. Negative      d. None of above
62. Which of the following has the high energy photon?  
 a. Visible light      b. X-rays      c. Ultraviolet light      d.  $\gamma$ -rays
63. In a closed room of  $1000\text{m}^3$ , a perfume bottle is opened up. The room develops smell. This is due to which property of gases?  
 a. Diffusion      b. Viscosity      c. Density      d. None of above
64. The air we \_\_\_\_\_ today has many harmful elements in it  
 a. Breathe      b. Are breathing      c. Breath      d. Have breathed
65. Fibrinogen is necessary for  
 a. Metabolism      b. Blood clotting      c. Reproduction      d. Respiration
66. Two boats moving parallel in the same directions  
 a. Will be pulled towards each other      b. Will be pulled away from each other  
 c. Will have no effect on each other      d. None of these is true
67. A well stoppered thermos flask containing some ice cubes is an example of  
 a. Closed system      b. Open system      c. Isolated system      d. None of above
68. Homicide  
 a. Is a poison      b. Means killing members of one's species  
 c. Means murder      d. Means the murderer of one's own family

69. All the flowers come at the same level due to equal size of their pedicels in  
 a. Corymb                      b. Umbel                      c. Catkin                      d. Panicle
70. Two parallel wires are carrying current in opposite direction. These two wires  
 a. Will attract each other                      b. Will repel each other  
 c. Will have no effect on each other                      d. None of the above
71. Which of the following is not correct in case of carboxylic acids  
 a. They are polar molecules                      b. They form H-bonds  
 c. They are stronger than mineral acids                      d. They have higher boiling points than corresponding alcohols
72. She dresses with great \_\_\_\_\_ and that is how she impresses people  
 a. Pride                      b. Otrageousness                      c. Ostentation                      d. Panche
73. A living tissue which in addition to its regular function also provides support to plants is  
 a. Xylem                      b. Collendryma                      c. Sclerendryma                      d. panache
74. The applied force which the solid can withstand without breaking is called  
 a. Stiffness of solid                      b. Strength of solid                      c. Ductility of solid                      d. Toughness of solid
75. When ethanal is treated with Fehling's solution. It gives a precipitate of  
 a. Cu                      b. CuO                      c.  $\text{Cu}_2\text{O}$                       d.  $\text{Cu}_2\text{O} + \text{Cu}_2\text{O}_3$
76. Opening and closing of stomata is controlled by which of the following factor(s)?  
 a. Sugar                      b. pH                      c. Potassium                      d. All of the above
77. As the temp of black body is increased the wavelength of max intensity radiation  
 a. Will shift towards the longer wavelength                      b. Will shift towards the shorter wavelength  
 c. Will not change                      d. None of these
78. The Cl atom attached to benzene ring is  
 a. M-directing                      b. O-directing  
 c. O-and p-directing and deactivating                      d. O—and p-directing and activating
79. Control centre of speech is  
 a. Medulla oblongata                      b. Diencephalons                      c. Cerebrum                      d. Cerebellum
80. Decay of one radioactive atom per second is equal to  
 a. One curie                      b. One Becquerel                      c. One half life                      d. One of the above
81. Acetic anhydride is obtained with acetyl chloride in the reaction with  
 a.  $\text{P}_2\text{O}_5$                       b.  $\text{H}_2\text{SO}_3$                       c.  $\text{CH}_3\text{COONa}$                       d.  $\text{CH}_3\text{COOH}$
82. It is very difficult to relax while working with their new boss because he is a hard  
 a. Worker                      b. Hearted                      c. Taskmaster                      d. Nut to crack
83. Filter feeders extract food particles from  
 a. Water                      b. Soil                      c. Air                      d. Blood
84. The ecological factor which does not change from place to place is  
 a. Precipitation                      b. Temperature                      c. Gravity                      d. Light
85. Fast neutrons can be slowed down by collisions with  
 a. Electrons                      b. Protons                      c. Phonons                      d. Photons
86. Which form of matter possesses higher magnitude of internal energy  
 a. Gaseous matter                      b. Solid matter                      c. Liquid matter                      d. All have the same magnitude
87. On the basis of which of the following ratio we can prove law of independence assortment  
 a. 9:3:3:1                      b. 9:3:4                      c. 1:2:1                      d. 2:1:1

88. If a shell explodes in air, its fragments fly off in different directions. The total momentum of fragments:  
 a. Increases      b. Decreases      c. Remains constant      d. None of above
89. A bottle of dry  $\text{HN}_3$  and a bottle of dry  $\text{HCl}$  connected through a long tube are opened simultaneously at both ends. The white  $\text{NH}_4\text{Cl}$  ring formed will be  
 a. At the centre of the tube      b. Near the  $\text{NH}_3$  bottle  
 c. Near the  $\text{HCl}$  bottle      d. Throughout the length of the tube
90. Photorespiration occurs when  
 a. Stomata are opened      b. Day is humid  
 c. Concentration of  $\text{CO}_2$  inside leaf is high      d. Concentration of  $\text{O}_2$  inside leaf is high
91. If  $\text{HCl}$  is added to  $\text{CH}_2 = \text{CH} - \text{CH}_3$ , what is formed?  
 a.  $\begin{array}{c} \text{CH}_3 \\ | \\ \text{CH}_3 - \text{CH} - \text{CH}_3 \end{array}$       b.  $\begin{array}{c} \text{CH}_3 - \text{C} - \text{CH}_3 \\ | \\ \text{Cl} \end{array}$   
 c.  $\begin{array}{c} \text{Cl} \\ | \\ \text{CH}_3 - \text{CH} - \text{CH}_3 \end{array}$       d. None of these  
 CH<sub>3</sub>-Cl
92. When  $\beta$ -particle is emitted from lead  ${}_{82}\text{Pb}^{214}$ , the mass number and charge number of Bismuth formed is  
 a.  ${}_{83}\text{Pb}^{214}$       b.  ${}_{81}\text{Pb}^{214}$       c.  ${}_{83}\text{Pb}^{214}$       d. None of above
93. Acetaldehyde on oxidation by  $\text{Na}_2\text{Cr}_2\text{O}_7/\text{H}_2\text{SO}_4$  gives  
 a.  $\text{CH}_3\text{COOH}$       b.  $\text{C}_2\text{H}_5\text{OH}$       c.  $\text{OHC}\cdot\text{CHO}$       d. None of above
94. In gene action the gene that mark the expression of another gene is termed as  
 a. Hypostatic      b. Epistatic      c. Hemistatic      d. Neostatic
95. If a material particles starts motion with speed equal to the speed of light, then the mass of this moving particle will  
 a. Remain constant      b. Become zero  
 c. Become equal to rest mass of particle      d. Become infinite
96. Which is the correct formula of ammonium carbamate?  
 a.  $\text{H}_2\text{NPNH}_2$       b.  $\text{NH}_4\text{COONH}_4$       c.  $\text{H}_2\text{NCOONH}_2$       d.  $\text{NH}_2\text{COONH}_4$
97. Autocracy is the government of.  
 a. One person with absolute power      b. Lawyers fraternity  
 c. Elected representatives of the masses      d. Intelligentsia
98. Which statement is not true about pteridophytes?  
 a. Presence of lateral meristem      b. Independent sporophyte  
 c. Absence of vessels      d. Presence of heteromorphic life cycle
99. Transition from  $n = 4, 5, 6, \dots$  to  $n = 3$  in hydrogen spectrum gives  
 a. Balmer series      b. Lyman series      c. Paschen series      d. Pfund series
100. The bottom line is that we cannot ignore the cultural aspect in education. The underlined expression means.  
 a. Most important thing      b. The last line in an essay      c. Conclusion      d. Trend
101. Green house effect is not produced by the abundance of the gas called.  
 a. Methane      b.  $\text{CO}_2$       c. Nitrous oxide      d. Sulphur dioxide



135. The dimensions of energy are the same as those of.  
a. Momentum                      b. Acceleration                      c. Force                      d. Work
136. Sudden as well as rapid mitosis leads to  
a. New organ                      b. New tissues                      c. Cancer                      d. Muscles
137. An electron when accelerated through a potential difference of one volt will gain energy equal to  
a. One erg                      b. One joule                      c. One electron volt                      d. One Watt sec
138. Which isomerism is not shown by alkene  
a. Metamerism                      b. Chain isomerism                      c. Position isomerism                      d. Geometrical Isomerism
139. Death occurs if level of glucose in blood falls to  
a. 60                      b. 50                      c. 40                      d. 30
140. As soon as he reached home, he realized that he had lost a five  
a. Thousands rupees note                      b. Thousands rupees' note  
c. Thousand rupees note                      d. Thousand rupee note
141. Plantigrad locomotion is found in  
a. Man                      b. Dog                      c. Horse                      d. Dolphin
142. The alternating current can be measured from its  
a. Magnetic effect                      b. Heating effect                      c. Chemical effect                      d. All above effects
143. The catalytic hydrogenation of benzene yields  
a. Xylene                      b. Cyclohexane                      c. Toluene                      d. Benzoic acid
144. The magnetic force act on a unit charge moving perpendicular to the magnetic field with unit velocity is called  
a. Magnetic induction                      b. Magnetic permeability                      c. Magnetic flux                      d. Permittivity
145. Which of the following is a compound?  
a. Ammonia                      b. Air                      c. Brass                      d. Oxygen
146. The pneumococcus strain used by Griffith in his experiments was  
a. Lophotrichous                      b. Amphitrichous                      c. Atrichous                      d. Monotrichous
147. An electron revolves around the nucleus and completes 50 rev/min. the work done by the coulomb's force is  
a. 50 J                      b. 50 Erg                      c. 50 foot pound                      d. Zero
148. A person throws a ball vertically upward while standing in a train moving with uniform velocity. The ball will fall  
a. In his hand                      b. Behind him                      c. Infront of him                      d. Beside him
149. The best known and the most highly developed fuel cell is the hydrogen/oxygen fuel cell. This is known as  
a. Proton exchange membrane cell                      b. Bacon cell  
c. Regenerative cell                      d. None of the above
150. Which one of the following is produced as a result of sexual reproduction  
a. Conidium                      b. Oidium                      c. Ascospore                      d. Zoospore
151. A metal forms strong base, salts and stable carbonates. The metal is  
a. Transition metal                      b. Alkali metal                      c. Alkaline earth metal                      d. None of above
152. Gonorrhea is a sex disease caused by  
a. Bacteria                      b. Virus                      c. Parasite                      d. None of above

153. The resolving power of the lens can be improved by using  
 a. Lens of short focal length      b. Lens of large focal length  
 c. Light of short wavelength      d. Light of large wavelength
154. Which of the following oxy acids of chlorine is least oxidizing in nature?  
 a. HOCl      b. CHIO<sub>2</sub>      c. HClO<sub>3</sub>      d. HClO<sub>4</sub>
155. Which one is non polar but contains polar bonds  
 a. HCl      b. HF      c. H<sub>2</sub>O      d. CO<sub>2</sub>
156. The building with numerous arches looked \_\_\_\_\_ in the moonlight  
 a. Brightly      b. splendidly      c. Mysteriously      d. Magnificent
157. Which of the following is an inactive enzyme without its cofactor  
 a. Coenzyme      b. Apoenzyme      c. Holoenzyme      d. Denatured enzyme
158. If the length of second pendulum becomes four times, then its time period will become  
 a. Four times      b. Two times      c. Half      d. One fourth
159. Which of the following is correct?  
 a. Molecularity of a reaction is same as the order of reaction  
 b. In some cases molecularity of a reaction is the same as order of reaction  
 c. Molecularity of a reaction is more than order of reaction  
 d. All are correct
160. Laiba is trying to determine the percentage of protein in beans because she is a  
 a. Biochemist      b. Microbiologist      c. Physiologist      d. Mycologist
161. A close surface contains equal and opposite charges. The net electric flux through the close surface is  
 a. Maximum      b. Minimum      c. Zero      d. Positive as well as negative
162. The O<sub>2</sub> gas is chemically inert at room temp because  
 a. Atoms in the O<sub>2</sub> molecules are held by multiple bonds  
 b. O = O bonds are strong  
 c. O<sub>2</sub> molecules do not collide with sufficient forces to break their bonds at ordinary temperature  
 d. All of the above
163. The emf of a galvanic cell can be calculated from  
 a. The size of the electrode      b. The pH of the solution  
 c. The amount of metal in the anode      d. The E° values of the half cell
164. Which of these are carriers of genetic information?  
 a. tRNA      b. mRNA      c. DNA      d. Nucleolides
165. Critical angle of a medium depends upon the  
 a. Speed of light      b. Wavelength of light      c. Refractive index of the medium      d. Intensity of light
166. The phase change of 180° is equivalent to a path difference  
 a.  $\frac{\lambda}{2}$       b.  $\lambda$       c.  $2\lambda$       d.  $4\lambda$
167. The constancy of e/m ratio for electron shows that  
 a. Electron mass is  $\frac{1}{1837}$ th of proton      b. Electrons are universal particles of all matter  
 c. Electrons are produced in discharge tube only      d. None of the above

168. Genome of which of the following consists of single molecule of DNA  
 a. HAV                                      b. HBV                                      c. HCV                                      d. HIV
169. The unit of conductance is  
 a. Ohm                                      b. Ohm-meter<sup>-1</sup>                                      c. Ohm-meter                                      d. mho
170. At what place, the motion of the bob of simple pendulum will be the slowest  
 a. At poles of earth                                      b. At equator of earth  
 c. Anywhere on the surface of earth                                      d. None of these
171. A liquid is in equilibrium with its vapors at its boiling point. On the average the molecules in the two phases have equal  
 a. Potential energy                                      b. Total energy                                      c. Kinetic energy                                      d. Intermolecular forces
172. Lithotripsy is a technique to  
 a. Remove kidney stones without surgery                                      b. Remove kidney stones with surgery  
 c. Treat kidney with medicines                                      d. Remove appendix
173. In times of war, govts. Do things which are expedient. The underlined word means  
 a. Endorsed by war council                                      b. Concomitant  
 c. Need of the hour                                      d. Useful but not necessarily right
174. Which one of the following plants feeds on water mites?  
 a. Nepenthes                                      b. Utricularia                                      c. Dionea                                      d. Drosera
175. If the resultant of two vectors, each of magnitude A, is also of magnitude A, the angle between the vectors will be  
 a. 30°                                      b. 45°                                      c. 60°                                      d. 120°
176. The 2% solution by weight of sodium chloride solution is prepared. The molality of this solution is  
 a. .34 molal                                      b. 0.25 molal                                      c. 2 molal                                      d. 0.02 molal
177. Which one among the following is not macroelement needed by plants  
 a. Magnesium                                      b. Sulphur                                      c. Iron                                      d. Potassium
178. Newton's rings are formed due to  
 a. Reflection of light                                      b. Interference of light                                      c. Diffraction of light                                      d. Polarization of light
179. For a reversible reaction to reach equilibrium state the reaction is said to be carried out in  
 a. Glass vessel                                      b. Iron vessel                                      c. Open vessel                                      d. Closed vessel
180. Goiter is caused by deficiency of  
 a. Sodium in water                                      b. Calcium in water                                      c. Iodine in water                                      d. Sugar in water
181. The current gain of transistor having collector current of 10mA and the base current of 40μA is  
 a. 2.5                                      b. 25                                      c. 250                                      d. 2500
182. Which of the following is cycloalkane  
 a. C<sub>6</sub>H<sub>14</sub>                                      b. C<sub>6</sub>H<sub>12</sub>                                      c. C<sub>6</sub>H<sub>10</sub>                                      d. C<sub>6</sub>H<sub>8</sub>
183. Which one of the following is found in plant cells only?  
 a. Peroxisome                                      b. Lysosome                                      c. Glyoxisome                                      d. Ribosome
184. Laser light is the result of  
 a. Spontaneous emission                                      b. Ordinary emission                                      c. Absorption of radiation                                      d. Stimulated emission

185. Neuron that carries messages from sense organ to the central nervous system is  
 a. Afferent                      b. Efferent                      c. Associated                      d. Interneuron
186. The number of photoelectrons emitted per second from the metal surface depends upon  
 a. Intensity of light              b. Frequency of light              c. Wavelength of light              d. Speed of light
187. Reason for alkali metals to be soft is that  
 a. They are less metallic in nature                      b. There is only one valency  
 c. They do not have close packed structures                      d. They have high I.E
188. If three coplanar forces acting on a body keep it in equilibrium, then these forces are  
 a. Concurrent                      b. Non concurrent                      c. Parallel                      d. Anti parallel
189. If water samples are taken from sea, river, clouds, lakes or snow, they will be found to contain hydrogen and oxygen in the ratio of 1:8 by weight. This indicates the law of  
 a. Definite proportion              b. Multiple proportion              c. Reciprocal proportion              d. None of above
190. Corpuscular animals are active during  
 a. Night                      b. Day                      c. Twilight                      d. Spring
191. The dimensions of angular acceleration are  
 a.  $[L^{-1}T^{-1}]$                       b.  $[LT^{-2}]$                       c.  $[T^{-2}]$                       d.  $[L^2T^{-2}]$
192. Red tides in oceans are produced by  
 a. Diatoms                      b. Dinoflagellate                      c. Water molds                      d. Myxomycota
193. The resistances of three arms of the balanced wheat stone bridge are 50 ohm. The resistance in the 4<sup>th</sup> arm is  
 a. 25 ohm                      b. 50 ohm                      c. 75 ohm                      d. 100 ohm
194. If the pressure and temp (K) of two litres of CO<sub>2</sub> are doubled, the volume of CO<sub>2</sub> would become  
 a. 5 litre                      b. 4 litre                      c. 8 litre                      d. 2 litre
195. The cartilage present in trachea is  
 a. Fibrous                      b. Hyaline                      c. Elastic                      d. Neurotic
196. Which of the following is conservative field?  
 a. Gravitational field              b. Electric field                      c. Magnetic field                      d. All such fields
197. Rabbits, parulus, rats, grasshoppers and grasses constitute a  
 a. Habitat                      b. Biome                      c. Community                      d. Population
198. How many atoms are contained in one mole of Ca(OH)<sub>2</sub>  
 a.  $5 \times 6.02 \times 10^{23}$  atoms                      b.  $30 \times 6.02 \times 10^{23}$  atoms  
 c.  $3 \times 6.02 \times 10^{23}$  atoms                      d.  $6 \times 6.02 \times 10^{23}$  atoms
199. The man sitting next to me on the plane was nervous because he \_\_\_\_\_ before  
 a. Had not flown                      b. Did not fly                      c. Has not flown                      d. Has not been flying
200. Size of the flower of chrysanthemum may be enlarged by removing  
 a. All leaves                      b. A few leaves                      c. All branches except one                      d. All floral bud except one

X-----X

## MEDICAL ENTRANCE TEST 2008

1. The students were \_\_\_\_\_ and the teacher, therefore did not take the class.  
a. Only few                      b. a few                      c. no much                      d. few
2. The largest demand of energy is generally fulfilled by:  
a. hydroelectric power                      b. Nuclear energy                      c. Solar energy                      d. fossil fuels
3. The magnitude of  $\hat{i}(\hat{j} \times \hat{k})$  is:  
a. 0                      b. 1                      c. -1                      d. 2
4. An atom has a net charge of -1 it has 18 electrons and 20 neutrons. Its mass number is:  
a. 37                      b. 32                      c. 35                      d. 20
5. Which one of the following bond is broken first in glycol sis to release the energy?  
a. glycosidic                      b. Peptide                      c. ester                      d. none of the above
6. Teeth adopted for cutting are:  
a. canines                      b. incisors                      c. memoler                      d. molars
7. Which one of the following isotopes of natural uranium undergoes reaction with slow neutron?  
a.  ${}_{92}\text{U}^{235}$                       b.  ${}_{92}\text{U}^{236}$                       c.  ${}_{92}\text{U}^{238}$                       d.  ${}_{92}\text{U}^{239}$
8. Cons:  $\text{H}_2\text{SO}_4$  is added to mixture of  $\text{K}_2\text{Cr}_2\text{O}_7$  and metal chloride is solid scale. Brown vapors are formed which one is correct formula?  
a.  $\text{CrOCl}_2$                       b.  $\text{COCl}_2$                       c.  $\text{CrO}_2\text{Cl}_2$                       d.  $\text{CrCl}_6$
9. A person who hates other people and avoids human to society is known:  
a. Misanthrope                      b. inhuman                      c. sadist                      d. misogynist
10. The ionization energy of hydrogen atom is 13.6 ev. The ionization potential required will be:  
a. 4.9 volt                      b.  $8.5 \times 10^{-10}$  volt                      c. 3.4 volt                      d. 13.6 volt
11. Which of the following is not correct:  
a. Xe is the most reactive among the rare gases.                      b. He is an inert gas.  
c. radon is obtained from decay of radium                      d. the most abundant rare gas found in atmosphere is He.
12. ....
13. ....
14. ....
15. Two waves of the same frequency and amplitude traveling in opposite direction along the same position the:  
a. electromagnetic waves                      b. micro waves.                      c. stationary waves                      d. sound waves
16. ....
17. Mangroves are:  
a. xerophytes                      b. mesophytes                      c. halophytes                      d. hydrophytes
18. in simple A.C capacitive circuit:  
a. the voltage leads the current by  $90^\circ$                       b. the voltage lags behind the current by  $90^\circ$   
c. the current leads the voltage by  $90^\circ$                       d. the current and voltage are in phase.
19. the phenomenon of mutual induction is induction is practically used is:-  
a. transformer                      b. generator                      c. galvanometer                      d. avometer



20. ....
21. Two chamber heart is found in  
a. leopard b. crocodile c. snake d. none of above
22. The color coding of carbon resistor is such that the first band is green and second band is yellow. The third band is red and the forth band is Silver. The value of resistance is:  
a. 4500 ohm with 10% to b. 5400 ohm with 10% .....  
c. 54000 ohm with 10% ..... d. 4500 ohm with 10% .....
23. Metallic carbide on treatment with water give a colourless gas which burns readily in air and gives a white precipitate with  $\text{AgNO}_3 + \text{Na}_4\text{OH}$  the gas is:  
a.  $\text{CH}_4$  b.  $\text{C}_2\text{H}_2$  c.  $\text{C}_2\text{H}_4$  d.  $\text{C}_2\text{H}_6$
24. ....
25. Which one of the following is homoeothermic animal?  
a. uromastrix b. salamander c. sea horse d. kangaroo
26. ....
27. ....
28. ....
29. Alternation of generations in plants is regarded a mechanism for:  
a. achieving haploidy b. Promoting survival c. Producing diploidy d. Having no significance
30. 'Blow great trumpet / horn refers to:  
a. Boast b. Violent flow of wind c. Celebrate enthusiastically d. eruption
31. What product is obtained when methyl magnesium chloride reacts with ammonia:  
a. Methane b. Methylamine c. Ethylamine d. Methyl Chloride
32. The total energy of a H-atom in its ground state is:  
a. Zero b. Negative c. Positive d. Can be both (b) & (c)
33. The individual with hare-lip shows with of the following condition?  
a. Hard Palate b. Polydactyl c. Cleft-palate d. Microcephale
34. Receptors sensitive to smell are:  
a. Mechanical b. Chemical c. Photo d. ....
35. Which of the following cannot be displaced from their salt solution by copper?  
a. Ag b. AU c. Pt d. Zn
36. Uncertainly principle can be expressed as:  
a.  $\Delta p \Delta x = h$  b.  $\Delta E \Delta t = h$  c. Both (a) and (b) d. None of these
37. Which hormone prepares the body for situations of stress and emergency?  
a. Adrenaline b. Nor adrenaline c. thyroxine d. insulin
38. For atomic numbers given below, which pair of elements will have the same chemical properties?  
a. 13, 22 b. 3, 11 c. 4, 24 d. 2, 4
39. Many ancient civilizations \_\_\_\_\_ on the banks of major rivers  
a. doshed b. Flourished c. Sprawled d. Succeeded
40. The frequency of the fundamental mode of a string stretched by a tension T and having mass m and length l is given by:  
a.  $f = \frac{1}{2} \sqrt{\frac{T}{ml}}$  b.  $f = \frac{1}{2l} \sqrt{\frac{IT}{m}}$  c.  $f = \frac{1}{2l} \sqrt{\frac{T}{m}}$  d.  $f = \frac{1}{2} \sqrt{\frac{T}{m}}$

41. Which of the following type of cytochromes is common in photosynthesis and respiration?  
a. cyt "O"                      b. cyt "a<sub>3</sub>"                      c. cyt "b"                      d. cyt "c"
42. 74g of calcium hydroxide will yield OH<sup>-</sup> ions:  
a. 17 g                      b. 34 g                      c. 51 g                      d. 40 g
43. The first law of thermodynamics can be expressed mathematically as:  
a.  $\Delta\theta = \Delta u + \Delta w$                       b.  $\Delta\theta = \Delta u$                       c.  $\Delta\theta = \Delta w$                       d. None
44. Which of the following pairs have same electronic structure?  
a. Ar & Cl<sup>-</sup>                      b. Ca & Ar                      c. Mg & Na                      d. Ag & Sn
45. What will be the effect on the speed of transverse waves on a string if the tension in the string remains constant but the diameter of the string becomes double?  
a. Remains constant                      b. Becomes half                      c. Becomes double                      d. Becomes four times
46. Peptide bond is formed between:  
a. Hydrogen groups of adjacent amino acids                      b. Functional group of the amino acids  
c. Carboxyl group and Amino group                      d. Functional group and hydrogen group of adjacent amino acid.
47. The oxidation number of chlorine in  $Ca(ClO_3)_2$  is:  
a. -1                      b. +3                      c. +5                      d. -6
48. A particle is moving in a circle of radius  $r$  with constant angular speed  $\omega$ . Its acceleration, directed towards the center of the circle is:  
a.  $\frac{\omega}{r}$                       b.  $\frac{\omega^2}{r}$                       c.  $\omega^2 r$                       d.  $\omega r^2$
49. -----
50. Anticodon of AUG will be:  
a. TAC                      b. UAC                      c. AUG                      d. CCA
51. In glass manufacturing process annealing is done for the prevention of:  
a. Air bubbles                      b. Impurities                      c. Strain                      d. Shining
52. A string passes over a smooth pulley and carries a 3kg mass at one end and a 5kg mass at the other and the acceleration of the masses is:  
a.  $2.5ms^{-2}$                       b.  $0.25ms^{-2}$                       c.  $9.25ms^{-2}$                       d.  $2.8ms^{-1}$
53. Which of these is a fresh water sponge?  
a. Sycon                      b. leucosolenia                      c. Spongilla                      d. Euplectella
54. If 28.0g nitrogen gas is reacted with 8.0g of hydrogen gas to form Ammonia, the limiting reactant among the two will be:  
a. N<sub>2</sub>                      b. H<sub>2</sub>                      c. Both a & b                      d. None of these
55. The unit of K<sub>c</sub> for the system  $N_2O_4 \rightleftharpoons 2NO_2$  is:  
a. Dimension (1.0 with no unit)                      b. Mole dm<sup>3</sup>                      c. Mole dm<sup>-3</sup>                      d. Mole<sup>2</sup> dm<sup>3</sup>
56. Rest mass energy of an electron is:  
a. 0.511 Mev                      b. 1 Mev                      c.  $8.0 \times 10^{-14} J$                       d. None of above
57. In earthworm, mucin & enzyme are produced by:  
a. Intestinal sac                      b. Typhlosole                      c. Oesophagus                      d. Pharyngeal mass
58. Which one is an auxiliary?  
a. with                      b. on                      c. do                      d. for

59. What is the trade name of tetrafluoro ethylene polymer?  
 a. Polystyrene      b. Bakelite      c. nylon      d. teflon
60. To an observer stationary on a platform a compared to a stationary clock and a moving clock clicks:  
 a. slower      b. faster      c. same rate as stationary clock      d. clicks negative time
61. Food is renewable resource due to:  
 a. Mechanical forming      b. Improved crop varieties  
 c. Continuous photosynthesis      d. pest control
62. Which one of the following does not have +7 oxidation ....  
 a. F      b. Cl      c. Br      d. I
63. The sum of the number of protons and the number of neutrons present in the nucleus of an atom is known as:  
 a. charge number      b. mass number      c. atomic number      d. magic number
64. What type of intermolecular attractive force are present in  $\text{CO}_2$  ?  
 a. Hydrogen bonding      b. Dipole-dipole interaction      c. London forces      d. covalent bonding
65. In a transverse wave the distance between a crest and the adjacent trough is:  
 a.  $\frac{\lambda}{2}$       b.  $\frac{\lambda}{4}$       c.  $\lambda$       d.  $2\lambda$
66. The term BIVALENT means:  
 a. Two chromatids      b. Two chromosomes      c. Four chromatids      d. Four chromosomes
67. The wavelength of a wave traveling with speed  $v$  and having frequency  $f$  is:  
 a.  $\lambda = \frac{v}{f}$       b.  $\lambda = vf$       c.  $\lambda = \frac{f}{v}$       d. None of above
68. Warmer water at  $4^\circ\text{C}$  is:  
 a. Lighter      b. Highest      c. Heavier      d. Heaviest
69. 10 L of  $\text{Cl}_2$  gas reacts with 40L of  $\text{H}_2$  gas under same conditions of temperature and pressure. How much volume of HCl should be produced?  
 a. 40L      b. 30L      c. 20L      d. 10L
70. The weight of a pilot diving down with an acceleration of  $9.8\text{ms}^{-2}$  will become:  
 a. Double      b. half      c. zero      d. Negative
71. Class filicinae belongs to "phylum"  
 a. Tracheophyta      b. Bryophyte      c. Thallophyta      d. Embryophyta
72. Which one among the following is NOT available at a vegetable shop?  
 a. Capsicum annum      b. Pisum Sativum      c. Triticum astivom      d. ....
73. ....
74. In the discharge tube emission the cathode rays requires:  
 a. Low potential and low pressure      b. low potential and high pressure  
 c. high potential and high pressure      d. high potential and low pressure
75. Energy of a photon having frequency 10 Hz will be:  
 a.  $6.63 \times 10^{-19} \text{ J}$       b.  $6.63\text{ev}$       c.  $6.63 \times 10^{-21} \text{ J}$       d.  $6.63 \times 10^{-15} \text{ ev}$

76. What happens to oxygen in the electron transport chain?  
 a. It is reduced to water  
 b. It is ..... gas  
 c. it is used as electron donor  
 d. it supplies energy to produce ATP
77. Which one of the following is not a derivative of organic acid?  
 a. Ester  
 b. Amide  
 c. Anhydride  
 d. Amine
78. Which one of the following is a correct relation?  
 a.  $m = \frac{m_0}{\sqrt{1 - \frac{v^2}{c^2}}}$   
 b.  $m = \frac{m_0}{\sqrt{1 - \frac{v}{c}}}$   
 c.  $m = m_0 \left( 1 - \frac{v^2}{c^2} \right)$   
 d.  $m = \frac{m_0}{\sqrt{1 - \frac{C^2}{v^2}}}$
79. Which animal possesses an open circulatory system?  
 a. Amoeba  
 b. Earthworm  
 c. Grasshopper  
 d. Man
80. -----
81. Dehydrohalogenation of alkyl halide is carried with:  
 a. Alcoholic KOH  
 b. Aqueous KOH  
 c. Aqueous NaOH  
 d. Alcoholic NaOH
82. Which of the following compounds has no double bond?  
 a. ....  
 b. Cellulose  
 c. Cholesterol  
 d. Vitamin A
83. The unit of pressure is:  
 a.  $\text{Nm}^{-2}$   
 b. One Pascal  
 c. One atmosphere  
 d. All
84. Calvin cycle takes place within:  
 a. stroma of chloroplasts  
 b. granum of the chloroplast  
 c. cytoplasm of the cell  
 d. ....
85. To have a windfall refers to:  
 a. Bad weather  
 b. receiving gifts  
 c. receiving profits  
 d. sudden calamity
86. Which enzyme helps in the digestion of carbohydrate?  
 a. Ptyalin  
 b. Pepsin  
 c. Diastase  
 d. ...
87. Ohm's law is valid only for currents flowing in:  
 a. metallic conductor  
 b. transistors  
 c. diodes  
 d. electric arcs
88. The maximum height  $H$  attained by a projectile projected with initial velocity  $v = (v, \theta)$  is given by:  
 a.  $H = v^2 \frac{\cos^2 \theta}{2g}$   
 b.  $H = v^2 \sin^2 \frac{\theta}{2g}$   
 c.  $H = v^2 \cos^2 \frac{\theta}{g}$   
 d.  $H = v^2 \cos^2 \frac{\theta}{g}$
89. Wings of a bird and fore limbs of man are:  
 a. Homologous  
 b. Analogous  
 c. Acquired  
 d. Vestigial
90. The word REPROACH means:  
 a. Approach again  
 b. reach again  
 c. blame  
 d. praise
91. The association in which an organism gets advantage and the other suffers is called:  
 a. symbiosis  
 b. parasitism  
 c. predation  
 d. mutualism
92. The word GAUNT means:  
 a. ill health  
 b. glove  
 c. slout  
 d. gravel
93. When treated with ammoniacal cuprous chloride, which of the following forms copper derivatives?  
 a.  $\text{C}_2\text{H}_6$   
 b.  $\text{C}_2\text{H}_4$   
 c.  $\text{C}_2\text{H}_2$   
 d.  $\text{C}_6\text{H}_6$
94. The correct representation of the vector  $\vec{A}$  in the xy-plane is given. In terms of the rectangular components as:  
 a.  $\vec{A} = A_x \hat{i} + A_y \hat{j}$   
 b.  $\vec{A} = A_x \hat{i} + A_y \hat{i}$   
 c.  $\vec{A} = A_x \hat{i} + A_y \hat{j}$   
 d.  $\vec{A} = +A_x \hat{i} + A_y \hat{i}$

95. The modern horse is called:  
 a. equus                      b. eohippus                      c. Mesohippus                      d. mercyhippus
96. Baron is prepared by heating  $B_2O_3$  with:  
 a. Potassium powder                      b. Bleaching powder                      c. Carbon powder                      d. Baking powder
97. The present SI unit of time is defined as:  
 a.  $\frac{1}{24} \times \frac{1}{60} \times \frac{1}{60}$  (mean solar day)                      b. the second elined by the electronic digital watch  
 c. duration of 9.192,631,770 vibration of cosium-133 atom                      d. ~~1~~ minute
98. Consider the following general reaction  $A + B \rightarrow \text{Products}$  rate of this reaction is expressed as  
 $\text{Rate} = K[A]^1[B]^1$  the correct order of reaction and molecularity is:  
 a. 2:2                      b. 2:3                      c. 3:2                      d. 3:3
99. A wire loop is moved parallel to a uniform magnetic field. The induced emf in the loop will:  
 a. Be maximum                      b. be zero                      c. depend on the size of the coll                      d. None of above
100. If we cover the lateral sides of the Gross-hopper with wax. The system most likely to be affected will be  
 a. digestive                      b. circulatory                      c. respiratory                      d. excretory
101. The word PROSCRIBE means:  
 a. say with authority                      b. unwanted behavior                      c. denounce                      d. supporting teacher
102. Consider the reaction :  $2SO_2 + O_2 \rightarrow 2SO_3 + \text{heat}$  The yield of  $SO_3$  will be maximum if:  
 a. both pressure & temperature are increase                      b. both pressure and temperature are decrease  
 c. temperature is decreased and pressure is increased.                      d. Temperature is increased and pressure is decreased
103. A man carries a 1kg body 10m horizontally on a level ground. The work done by the man is:  
 a. 10 J                      b. 1 J                      c. 0 J                      d. 5 J
104. Which one of the following does not bring about erosion of soil?  
 a. carolers forming                      b. extensive ploughing                      c. moderate grazing                      d. heavy grazing
105. To burn the Candle at both ends refers to:  
 a. Hard work                      b. face great loss                      c. face challenge                      d. waste money
106. In one molal aqueous solution of  $C_2H_5OH$  the mole fraction of  $C_2H_5OH$  is:  
 a. 0.1                      b. 0.9                      c. 0.0177                      d. 1.0
107. The value of G at the moon as compared with its value at the earth is:  
 a. Smaller                      b. same                      c. greater                      d. zero
108. The human sacrum consists of how many ....  
 a. Two                      b. Three                      c. four                      d. five
109. The word LEVITY means  
 a. Impose one's viewpoint                      b. serious attitude                      c. Non-serious attitude                      d. Enjoy frequent leave
110. Which one of the following is electron deficient compounds:  
 a.  $NH_3$                       b.  $PH_3$                       c.  $PCl_3$                       d.  $BCl_3$
111. An object is placed between convex lens and its focus . the image formed is:  
 a. real inverted, in front of the lens                      b. virtual, erect, in front of the lens  
 c. real erect behind the lens                      d. real inverted behind the lens



112. Which of the following meristem is responsible for wood formation in plants?  
 a. lateral meristem      b. Apical meristem      c. Intercalary      d. None
113. In which period is the most electronegative element found?  
 a. 1      b. 2      c. 3      d. 4
114. ....
115. Bones are held together of the joints by:  
 a. Tendons      b. smooth muscles      c. Ligaments      d. Nerves
116. Which one is a preposition?  
 a. against      b. loudly      c. so      d. be
117. The formation of PVC from vinyl chloride is an example of:  
 a. Substitution reaction      b. addition polymerization  
 c. condensation polymerization      d. condensation reaction
118. The type of intermolecular forces (force between the particles) present in solid mercury is:  
 a. covalent bonds      b. Ionic Bonds      c. metallic bonds      d. H-bonds
119. A p-type crystal is formed when Ge or Si crystal is doped with an impurity which is:  
 a. nonviolent      b. divalent      c. trivalent      d. pentavalent
120. 'Raphanus sativus' belongs to family:  
 a. Poaceae      b. fabaceae      c. Brassicaceae      d. ....
121. The developing embryo is protected against the physical trauma by:  
 a. pericardial fluid      b. Allantoic fluid      c. Amniotic fluid      d. All of the above
122. Which one of the following contains the greatest number of atoms:  
 a. 4g of Hydrogen      b. 4g of magnesium      c. 71 g of chlorine      d. 127g of iodine
123. A step up transformer is that which:  
 a. increase of power      b. increase of current      c. increase of voltage      d. increase of energy
124. ....
125. The managing director \_\_\_\_\_ staff to work hard with a promise of high salary:  
 a. motivates      b. mitigates      c. maneuvers      d. minces
126. Substances dissolved in water react better because:  
 a. water brings them close      b. water helps them in bonding  
 c. water dissolves them in ions      d. water reacts with them
127. ....
128. ....
129. If red and white colour flowers in mirabilis jalapa are crossed, the  $F_1$  generation will show:  
 a. All red      b. all white      c. all pink      d. 1. red, 2, pink & 1 white ration
130. The word INCENSE means:  
 a. Make angry      b. Alert      c. fool ill      d. encourage
131. The catalyst used in the contact process is easily poisoned by:  
 a. Nitrous oxide      b. carbon dioxide      c. Arsenic oxide      d. nitrogen oxide

132. Two coherent monochromatic sets of waves will interfere constructively in the region of superposition only if the path difference between them is:  
 a. half wavelength  
 b. integral number of wavelength  
 c. quarter wavelength  
 d. odd integral number of half wavelength
133. Cadmium rods are used in a nuclear reactor for:  
 a. slowing down fast neutrons  
 b. speeding up slow neutrons  
 c. absorbing fast neutrons  
 d. regulating the power level of the reactor
134. The growth of the pollen tube through style to the ovary is a type of movement called:  
 a. geotropism  
 b. chemotropism  
 c. chemotropism  
 d. phototropism
135. The word PRODIGAL means.  
 a. careful with money  
 b. wasteful with money  
 c. wonderful  
 d. helpful to people
136. ....
137. A solenoid has length  $l$  and Number of turns. It carries a current  $I$  the magnetic field produced inside the solenoid will be:  
 a.  $B = \mu_0 NI l$   
 b.  $B = \mu_0 \frac{l}{NI}$   
 c.  $B = \mu_0 \frac{NI}{l}$   
 d.  $B = \mu_0 \frac{l}{N}$
138. Which of the following expel imperfectly developed embryo out of the body?  
 a. prototherians  
 b. eutherians  
 c. metatherian  
 d. all of the above
139. For which reaction of the unit of rate constant "K" is the same as that of the reaction rate?  
 a. zero order  
 b. first order  
 c. second order  
 d. third order
140. She was \_\_\_\_\_ of the result of the interview which she attended.  
 a. reluctant  
 b. apprehensive  
 c. pervasive  
 d. bounced
141. The formula  $CH_3(CH_2)_{14}COO^-Na$  represents a member of the class of compounds called:  
 a. steroids  
 b. carbohydrate  
 c. vitamins  
 d. soap
142. Pair production can take place only if the energy  $E$  of the photon is:  
 a.  $E = 0.52 \text{ Mev}$   
 b.  $E < 1.02 \text{ Mev}$   
 c.  $E < 0.52 \text{ Mev}$   
 d.  $E > 1.02 \text{ Mev}$
143. Each organism has a definite functional position different from either organism s of the locally is called:  
 a. Community  
 b. Niche  
 c. Habital  
 d. specious
144. If the sequence of the one strand of DNA is ATGCTC, the sequence of the other strand would be:  
 a. CACGTC  
 b. TAGCATG  
 c. TACGAG  
 d. GACGTG
145. Four moles of electrons ( $4 \times 6.02 \times 10^{23}$  electrons) would electroplate how many grams of silver from a silver nitrate solution?  
 a. 216  
 b. 324  
 c. 432  
 d. 540
146. Three capacitors of capacitance  $2 \mu F$  each are connected in series to a power supply of 6 volt. The voltage across each capacitor is:  
 a. 6volt  
 b. 1 volt  
 c. 3 volt  
 d. 2 volt
147. Which of the following physiological phenomenon is responsible of guttation :  
 a. ....  
 b. capillary rise of water  
 c. root pressure  
 d. tensile strength
148. Electronic configuration of Cu is:  
 a.  $3d^{10} 4s^1$   
 b.  $3d^{11} 4s^0$   
 c.  $3d^{10} 4s^2$   
 d.  $3d^{10} 4s^0$

149. The critical day length of *Hyoscyamus* for flowering is:  
 a. 15.5 Hours      b. 09 hours      c. 11 hours      d. 13 hours
150. The silky finish of mercerized cotton is obtained by treating cotton with a solution of:  
 a. NaOH      b.  $\text{NaHCO}_3$       c.  $\text{Na}_2\text{CO}_3$       d.  $\text{Na}_2\text{CO}_3 \cdot 2\text{H}_2\text{O}$
151. Transistor in a circuit basically acts as:  
 a. Voltage amplifier      b. oscillator      c. current amplifier      d. rectifier
152. ....
153.  $4.0 \text{ dm}^3$  of  $\text{O}_2$  at a pressure 800 atm and  $1.0 \text{ dm}^3$  of  $\text{N}_2$  at a pressure of 100 atm are put into a  $2.0 \text{ dm}^3$  vessel. The total pressure in the vessel is:  
 a. 800atm      b. 600 atm      c. 900 atm      d. 200 atm
154. The amount of heat required to raise the temperature of 1 Calorie of substance through 1 K is called:  
 a. heat capacity      b. 1 Joule      c. specific heat      d. one calorie
155. Two individuals formed when two eggs are fertilized of the same time results in twins that are genetically different are:  
 a. identical twins      b. siames twins      c. fraternal twins      d. double twins
156. Which one of the following has the lowest pH?  
 a. 1 M HF      b. 1 M HCl      c. 1m  $\text{CH}_3\text{COOH}$       d. 1 M NaOH
157. The orbital velocity of a satellite orbiting around the earth at distance .....  
 a.  $v = \sqrt{\frac{GMe}{R}}$       b.  $v = \sqrt{\frac{GR}{m}}$       c.  $v = \sqrt{\frac{G}{Re}}$       d.  $v = \sqrt{\frac{M}{GR}}$
158. Which of the following group of animals run very fast?  
 a. digitgrade      b. unguligrade      c. ....      d. Plantigrade
159. The electrical conductivity of NaCl crystal is:  
 a. More than NaBr crystal      b. Less than NaBr crystal  
 c. equal to NaBr crystal      d. NaCl crystal doesn't conduct electric current
160. A meter rod is moving with speed of light with respect to a stationary observer. The length of the rod will appear to the observer as approaching:  
 a. infinite      b. zero m      c. 2 meter      d. none of above
161. The final image formed by a two lens compound microscope is:  
 a. real, erect      b. real inverted      c. virtual inverted      d. virtual erect
162. "The open water zone away from shore to the depth of effective light penetration and occupied by phytoplankton like green algae euglena etc." which of the following regions of fresh water has all these properties?  
 a. littoral      b. limonitic      c. profundal      d. both 'a' and 'b'
163. What type(s) of bonds is/are present in  $\text{NH}_4\text{Cl}$ ?  
 a. Ionic      b. Covalent      c. Co-ordinate covalent      d. All of them
164. ....
165. In which case the genotypic and phenotypic ratio will be 1:2:1?  
 a. complete dominance      b. incomplete dominance      c. Co-dominance      d. None

166. You are electrolyzing potassium salt of a dicarboxylic acid in aqueous solution. Which product do you expect to be formed?
- a.  $\begin{array}{c} CH_2 \\ || \\ CH_2 \end{array}$       b.  $\begin{array}{c} CH \\ ||| \\ CH \end{array}$       c.  $\begin{array}{c} CHNa \\ || \\ CHNa \end{array}$       d. None
167. A nucleus emits gamma ( $\gamma$ ) photon what happens to its atomic number and actual mass:
- a. atomic number and actual mass remain unchanged      b. atomic number and actual mass both decrease  
c. atomic number and actual mass both increase  
d. atomic number remains the same but the actual mass decrease
168. When an anopheles of mosquito bites a healthy person it injects:
- a. merozoites      b. Sporozoite      c. Gametocytes      d. Oocyte
169. Formaldehyde give an addition product with methyl magnesium iodide. Which one aqueous hydrolysis gives:
- a.  $CH_3OH$       b.  $C_2H_5OH$       c.  $(CH_3)_2CHOH$       d. ....
170. For a H-atom which one of the following statements is correct?
- a. the radius of the orbits are integral multiple of the Bohr-radius .... 0.053nm  
b. the angular momentum is n times  $\frac{h}{2\pi}$   
c. the energy in the nth- orbit is n times the ground state energy.      d. None of above
171. All of the following are nematodes except:
- a. Ascaris      b. Neries      c. Trichinella      d. Guinea worm
172. The oxidation number of iron in  $(Fe(CN)_6)^{-4}$  is:
- a. +3      b. +2      c. +4      d. +6
173. If an amount of work  $\Delta W$  is done by an agent in time interval  $\Delta t$ , the power of that agency will be:
- a.  $\Delta W / \Delta t$       b.  $\Delta t / W \Delta$       c.  $\Delta t \Delta W$       d.  $\Delta W + \Delta t$
174. Daphnia belongs to the class:
- a. insecta      b. Arachnida      c. Myriapoda      d. crustacean
175. The longest bond is of:
- a. H - I      b. H - O      c. H - S      d. H - Cl
176. -----
177. The number of significant figures in the measurement of  $5.05 \times 10^{-3} ms^{-1}$  is:
- a. 2      b. 3      c. 4      d. 8
178. In bryophytes sterile hair are produced between sex organs to keep them:
- a. dry      b. wet      c. worm      d. covered
179. Which one is an interjection?
- a. How      b. Hurrah      c. Go      d. Otherwise
180. The ideal gas equation is  $PV = nRT$  the symbol n in SI unit represent:
- a. the number of molecules in the gas      b. Avogadro's number  
c. the number of kilo-moles      d. the number of molecules per unit volume
181. Gas evolved in bioconversion of solid waste is:
- a. Methane      b. Sulphur dioxide      c. Nitrogen dioxide      d. Ethane
182. The molecular of oxygen has two unpaired electrons. It is therefore:
- a. diamagnetic      b. paramagnetic      c. ferromagnetic      d. electromagnetic

183. The dimension of torque are:  
 a. (MLT)      b. ( $M^2 L^2 T$ )      c. ( $ML^2 T^{-2}$ )      d. ( $ML^2 T^2$ )
184. The word PREDILECTION means:  
 a. preference      b. prediction      c. reverence      d. induction
185. London dispersion forces (forces between the particles) are present in:  
 a. Gases only      b. liquids only      c. solids only      d. all of the above
186. -----
187. Crop rotation leads to:  
 a. increase in the soil nutrient      b. more aeration of soil      c. Soil fertility      d. ....
188. The fixing solution used in developing a negative in photography contains:  
 a. hydroquinone      b. sodium thiosulphate      c. pyrogallal      d. AgBr
189. In Compton effect, the photon scattered at an angle of  $90^\circ$ . The Compton's shift of wavelength will be:  
 a.  $\Delta\lambda = \frac{h}{m_0 C}$       b.  $\Delta\lambda = \frac{h}{m_0 C^2}$       c.  $\Delta\lambda = \frac{m_0 C}{h}$       d.  $\Delta\lambda = \frac{m_0 C^2}{h}$
190. Which one of the following characteristics in man is controlled by a recessive gene?  
 a. tongue rolling      b. Diabetes      c. Skin colour      d. Eye colour
191. Dry  $CO_2$  is passed through grignard reagent in the presence of ether as a solvent. The intermediate is decomposed with diluted HCl giving a compound 'X' identify 'X'.  
 a. primary alcohol      b. secondary alcohol      c. acetone      d. carboxylic acid
192. A person having a mass of 60kg exerts a horizontal force of 150N in horizontal floor with constant velocity, Net force is:  
 a. 90 N      b. 60 N      c. 150 N      d. 100 N
193. The major and immediate nitrogenous waste product of protein metabolism is:  
 a. urea      b. uric acid      c. creatinine      d. Ammonia
194. To what volume in ..... must 50.0ml of 3.50 M  $H_2SO_4$  be diluted in order to make 2 M  $H_2SO_4$ ?  
 a. 25      b. 60.1      c. 87.5      d. 93.2
195. A  $50\Omega$  resistance wire is stretched such that its length is doubled and its cross section area becomes half. The new resistance is:  
 a.  $100\Omega$       b.  $200\Omega$       c.  $50\Omega$       d.  $150\Omega$
196. Phages viruses are usually abundant in the intestine of man and animals because.  
 a. abundant bacteria are present      b. abundant water is present  
 c. abundant nutrients are present      d. they can only live at human body temperature
197. In a woody plant the number of structures on ion sin cell has to cross to reach the adjunction cell is:  
 a. 3      b. 5      c. 6      d. 7
198. For reaction  $3O_{2(g)} \rightleftharpoons 2O_{3(g)}$        $K_c = 10^{-56}$  at  $25^\circ C$  one can predict  
 a. more  $O_3$  is formed      b. more reactants are consumed  
 c. the forward reaction progresses to a large extent      d. the backward reaction goes to near completion.
199. Why is it easier to turn a steering wheel with both hands than with a single hand?  
 a. the applied force is doubled      b. two equal forces act concurrently on the wheel  
 c. A couple acts on the wheel      d. two equal and opposite forces act concurrently on the wheel.
200. Which of the following is Not present in the pancreatic juice?  
 a. Amylase      b. lipase      c. trypsinogen      d. insulin



MEDICAL ENTRANCE TEST 2009

- Which of the following radiation has the least wavelength?
  - $\alpha$ -rays
  - x-rays
  - Cosmic rays
  - $\beta$ -rays
- Grignard reagent is prepared by reacting:
  - Alkyl halide and Mg
  - Alkane and Mg
  - Alcohol and Mg
  - None of them
- All of the following structures are proteinous in nature except:
  - Hooves
  - Hemoglobin
  - Enzymes
  - Steroids
- Which of the following properties of light does not depend upon the nature of the medium?
  - Velocity
  - Wavelength
  - Frequency
  - Amplitude
- Which of the following carboxylic acids is the strongest?
  - Dichloroacetic acid
  - Chloroacetic acid
  - Formic acid
  - Acetic Acid
- Most favorite host cell of HIV - Virus is:
  - Lymphocytes
  - RBC
  - T-Cell
  - B-Cells
- The index of refraction of light in medium and vacuum is given by:
  - $\eta = \frac{c}{v}$
  - $\eta = \frac{v}{c}$
  - $\eta = VC$
  - $\eta = V.C$
- Which compound shows the highest boiling point?
  - $C_2H_6$
  - $C_2H_5Cl$
  - $CH_3OCH_3$
  - $C_2H_5OH$
- Sunken stomata are found in:
  - Mesophytes
  - Xerophytes
  - Halophytes
  - Hydrophytes
- It is useless \_\_\_\_\_ them; they are sure to have left the house by now.
  - to call
  - call
  - Called
  - calling
- The particle carrying a charge of (2e) falls through a potential difference of 3V. Energy required by the particle is:
  - $9.6 \times 10^{-19} \text{ J}$
  - $1.6 \times 10^{-19} \text{ J}$
  - $3.2 \times 10^{-19} \text{ J}$
  - $6.9 \times 10^{-19} \text{ J}$
- Carbon atom in carbonyl is:
  - SP hybridized
  - SP<sup>2</sup> hybridized
  - SP<sup>3</sup> Hybridized
  - None of the above.
- The mammals termed connecting link between reptilian and mammals.
  - Marsupials
  - Eutherians
  - Monotremes
  - Metatherians
- The ratio of the heat accepted to the heat rejected by a Carnot engine gives:
  - The Efficiency of the working substances.
  - The Ideal gas scale temperature
  - The thermal conductivity at the working substance.
  - None of above.
- The unit of 1<sup>st</sup> order rate constant are;
  - Sec
  - Sec<sup>-1</sup>
  - Mol. dm<sup>-3</sup> Soc<sup>-1</sup>
  - None of above
- In which of the following book lungs are found?
  - Clam worm
  - Silver fish
  - Leech
  - Spider

- 17) The speed of particle at the end of four successive seconds is 20, 25, 30, 35 km/hr, the acceleration of the particle is;  
 a. 5 km/hr<sup>2</sup>                      b. 5 km/sec<sup>2</sup>                      c. 5 km-hr/sec                      d. 5 km/hr-sec
- 18) The paramagnetic nature of the substance depends on;  
 a. The number of electrons in the outermost shell.  
 b. The number of electrons that are easily ejected  
 c. The number of unpaired electrons                      d. The number of lone pair electrons.
- 19) Tissue organization is missing in protozoa and found in:  
 a. Parazoa                      b. Metazoa                      c. Sporozoa                      d. Monera
- 20) INVALUABLE is closest in meaning to:  
 a. External valuable                      b. Worthless                      c. Highly expensive                      d. Fertile
- 21) The orbital speed of the satellite orbiting around the earth is:  
 a.  $\sqrt{\frac{GM}{Re}}$                       b.  $\sqrt{\frac{GMe}{Re}}$                       c.  $\sqrt{\frac{GMe}{R^2}}$                       d.  $\sqrt{\frac{GMe}{h}}$
- 22) When does a chemical reaction attain equilibrium?  
 a. When forward and backward reaction taking place at the same rate  
 b. Reaction takes place                      c. The forward and backward  
 d. There are two reactions with one faster than the other.
- 22) All of the following are mono nucleotides EXCEPT:  
 a. A.M.P                      b. A.T.P                      c. A.D.P.                      d. F.A.D.
- 23) If  $\hat{n}$  is unit vector in the direction of vector  $\vec{A}$  then.  
 a.  $\hat{n} = \frac{\vec{A}}{|\vec{A}|}$                       b.  $\hat{n} = \frac{\vec{A}}{|\vec{A}|}$                       c.  $\hat{n} = \vec{nA}$                       d.  $\hat{n} = \frac{A}{A}$
- 24) The following compounds, which has the shortest carbon – halogen bonds?  
 a. CH<sub>3</sub>F                      b. CH<sub>3</sub>I                      c. CH<sub>3</sub>Cl                      d. CH<sub>3</sub>Br
- 25) The attachment of two sub-units of ribosome along mRNA is controlled?  
 a. Sodium ions                      b. Calcium ions                      c. Potassium ions                      d. Magnesium ions
- 26) Which one is auxiliary  
 a. With                      b. one                      c. do                      d. for
- 27) The value of K (equilibrium constant) for a reaction?  
 a. Is the same at different temperature?  
 b. Is different at different temperature  
 c. Is negligible at room temperature.                      d. Can be the same at different temperatures.
- 23) Proper arrangement of layers in plant cell from inside outwards is:  
 a. Primary wall – secondary wall – middle lamella                      b. Secondary wall – primary wall – middle lamella  
 c. Primary wall – Middle lamella – secondary wall                      d. Secondary wall – middle lamella – primary wall
- 24) The Horizontal range of the projectile is:  
 a.  $R = \frac{V_0^2 \sin\theta \cos\theta}{g}$                       b.  $R = \frac{V_0^2 \sin\theta}{2g}$                       c.  $R = \frac{V_0^2 \cos(2\theta)}{g}$                       d.  $R = \frac{V_0^2 \sin(2\theta)}{g}$
- 25) Which of the following species deactivate the benzene ring when attached to Benzene ring.  
 a. C<sub>2</sub>H<sub>5</sub>                      b. SO<sub>3</sub>H                      c. NH<sub>2</sub>                      d. CH<sub>3</sub>

- 26) Two parents strands of DNA molecules are:  
 a. Parallel                      b. Ant parallel                      c. ...                      d. None
- 27) The resistance of the pure semi conductor decreases in a certain rate with the:  
 a. Decrease of temperature                      b. Increase in current  
 c. Increase of temperature                      d. Decrease in current
- 28) The elements Arsenic and Antimony are considered as:  
 a. Metals                      b. Non metal                      c. metalloid                      d. None of above.
- 29) Appendix is vestigial in man but may play role in:  
 a. Digestion                      b. Excretion                      c. Movement                      d. Immunity
- 30) The paratrooper of mass 80 kg descends vertically at a constant velocity of  $3.0\text{m-s}^{-1}$ . Taking the acceleration of free fall as  $10\text{m-s}^{-2}$  find out what is the net force acting on him? ( $g=10\text{m/s}^2$ ):  
 a. Zero                      b.  $800\text{N} - \text{Upward}$   
 c.  $800\text{N} - \text{downward}$                       d.  $24\text{N} - \text{downward}$
- 31) Benzene is the prime member of:  
 a. A cyclic compounds                      b. All cyclic compounds  
 c. Hetro cycle compounds                      d. Aromatic compounds
- 32) Ammonia is formed during digestion in:  
 a. Liver                      b. Stomach                      c. Small intestine                      d. Large Intestine
- 33) If you had passed your examination we \_\_\_\_\_ a celebration:  
 a. Would have had                      b. Must have                      c. would have                      d. will have
- 34) Tell him not \_\_\_\_\_ anyone enter the enclosure:  
 a. To let                      b. Let                      c. to have let                      d. telling
- 35) The acceleration of falling body in fluid depends upon:  
 a. Velocity                      b. viscosity of fluid                      c. density of the body                      d. all of above
- 36) The sodium ion is ISO electronic with:  
 a. N                      b.  $\text{P}^{3-}$                       c.  $\text{K}^+$                       d.  $\text{F}^-$
- 37) In which of the following solvent are alkenes the most soluble?  
 a. Water                      b. Ethyl alcohol                      c. Ammonia                      d. Carbon tetrachloride
- 38) Two concurrent forces have a maximum resultant of 45N and minimum resultant of 5N. What is the magnitude of each of these?  
 a. 0.45N                      b. 5N, 9N                      c. 20N, 25N                      d. 0N, 45N
- 39) The change in enthalpy is a measure of the heat reaction at:  
 a. Constant volume                      b. Constant pressure and volume  
 c. Variable pressure                      d. Constant pressure
- 40) The direction of torque is:  
 a. Parallel to the plane of F and  $\gamma$                       b. Perpendicular to the plane of F and  $\gamma$   
 c. Anti - Parallel to the plane of F and  $\gamma$                       d. Is the same as that of the plane of F and  $\gamma$
- 41) Cloned dolly was identical to the:  
 a. Parents, who gusted and gave birth to dolly                      b. Parents, who donated egg-cell  
 c. Parent, who donated somatic cell                      d. Both (b) and (c)
- 42) Reaction of alcohol with sodium produces:  
 a. Alkoxides                      b. Ethane                      c. Alkane                      d. Alloyed

43) True column of chromosome number in Garden pea and tobacco is:

Garden Pea	Tobacco
a. 13	17
b. 14	48
c. 15	49
d. 16	50

- 44) When I got up yesterday, the ground was wet it \_\_\_\_\_.
- a. Has rained      b. was rained      c. had rained      d. Rained
- 45) How are the two vectors of the same magnitude oriented to get a resultant of the same magnitude?
- a.  $90^\circ$       b.  $60^\circ$       c.  $45^\circ$       d.  $120^\circ$
- 46) Thermite process is:
- a. Exothermic      b. Endothermic      c. Reversible      d. None of above
- 47) Cleavage differs from mitosis in that:
- a. It occurs only in zygote      b. it occurs in all body cells
- c. It results into haploid cells only      d. it results into identical cells.
- 48) Rain drops falling from sky reach the ground with:
- a. Constant acceleration      b. Constant terminal velocity
- c. Acceleration greater than g      d. Variable acceleration
- 49) In the laboratory standard solutions are prepared in:
- a. Conical flasks      b. Beakers
- c. Volumetric flasks      d. Measuring cylinder
- 50) RBCs are destroyed in the liver while WBCs are destroyed in:
- a. Plasma      b. Liver
- c. Inside various cells of body      d. outside of the blood stream
- 51) Potentiometer is the instrument works on the principle of:
- a. Kirchhoff's 1<sup>st</sup> law      b. Wheatstone bridge
- c. combination of resistance      d. Kirchhoff's 2<sup>nd</sup> law
- 52) Nitrogen has three unpaired electrons according to:
- a. Hund's rule      b. Pauli rule
- c. Pauli's exclusion principle      d. Thumb rule
- 53) Condensation of chromosomes reaches to its peak during early:
- a. Prophase      b. Metaphase      c. Anaphase      d. Telophase
- 54) \_\_\_\_\_ is \_\_\_\_\_ magazine he can lay his hands on:
- a. Some      b. Every      c. The      d. Any
- 55) The density of the steel ball was determined by measuring the mass and diameter. The mass was measured with 1% and diameter 3% of the error. In the calculated density of the steel ball is at most:
- a. 2%      b. 8%      c. 4%      d. 10%
- 56) The inert form of carbon is:
- a. Diamond      b. Graphite      c. Coal      d. Charcoal
- 57) The enzyme "Reverse transcriptase" present in HIV - virus is:
- a. 50 molecules per virion      b. 40 molecules per virion
- c. 30 molecules per virion      d. 20 molecules per virion

- 58) The vectors  $\vec{A}$  and  $\vec{B}$  are such that  $|\vec{A} + \vec{B}| = |\vec{A} - \vec{B}|$ . The angle between the two vectors is:  
 a.  $0^\circ$                       b.  $60^\circ$                       c.  $90^\circ$                       d.  $180^\circ$
- 59) For the separation of gases from a mixture we use:  
 a. Simple distillation                      b. Fractional distillation  
 c. Chromatography                      d. Graham's law diffusion
- 60) All of the following are carbohydrate EXCEPT:  
 a. Glycogen                      b. Collagen                      c. Starch                      d. Cellulose
- 61) If a green light in a Young double slit experiment is replaced by monochromatic orange light of the same intensity. Then:  
 a. Fringe width will decrease                      b. Fringe width will increase  
 c. Fringe width will remain the same                      d. Fringe width will become less intense
- 62) Which one of the following forms the most acidic oxide:  
 a. Al                      b. Si                      c. Fe                      d. P
- 63) The amount of bile produced by human in liver is:  
 a. 1000 ml/day                      b. 2000 ml/day  
 c. 3000 ml/day                      d. 4000 ml/day
- 64) When the man failed to answer where \_\_\_\_\_ the police became suspicious:  
 a. Did he belong to                      b. was he belonging to  
 c. he belonged to                      d. he was belonging to
- 65) Two bodies with masses  $m_1$  and  $m_2$  have equal kinetic energies. If  $M_1$  and  $M_2$  are their respective momentum then the ration between  $M_1$  and  $M_2$  is:  
 a.  $m_1 : m_2$                       b.  $\sqrt{\frac{m_1}{m_2}}$                       c.  $m_1^2 : m_2^2$                       d.  $\sqrt{m_1} : \sqrt{m_2}$
- 66) Which statement is correct:  
 a. Standard Hydrogen Electrode (SHE) always acts as anode  
 b. "SHE" may act a cathode or anode depending upon the reduction potential of the counterpart  
 c. "SHE" always acts as cathode in voltaic cells                      d. None of above
- 67) Daphnia belongs to:  
 a. Insecta                      b. Annelida                      c. Crustacean                      d. Arachinda
- 68) If frequency of incident light falling on photo-emissive plate is doubled. Kinetic energy of emitted photoelectron is:  
 a. Doubled                      b. More than double                      c. Unchanged                      d. Less than double
- 69) The stronger the reduction potential the more difficult it is to:  
 a. Oxidize the compound                      b. Reduce the compound  
 c. Electrolyze the compound                      d. None of the above
- 70) Changes in gene frequencies in small population by chance is called:  
 a. Gene Pool                      b. Genetic drift                      c. Gene mutation                      d. Gene flow
- 71) The number of significant figures in 4.0030 is:  
 a. Four                      b. Five                      c. Two                      d. Three
- 72) What is the ionic strength of 0.01 M barium chloride solution?  
 a. 0.03                      b. 0.02                      c. 0.04                      d. 0.01
- 73) Feathers of birds are water proof due to the secretion of:  
 a. Soduferous glands                      b. Endocrine gland                      c. Preen gland                      d. thymus glands



- 74) A train is \_\_\_\_\_ different bogeys:
- Made of
  - Make up of
  - made with
  - made up of
- 75) Hydrogen atom in their ground state absorbs energy from the incident photon. Which makes a transition to energy level characterized by  $n = 4$  the number of lines observed are:
- 8
  - 4
  - 6
  - 10
- 76) Stoichiometric calculation based on chemical equation provides us intimation about:
- Theoretical yield
  - Practical yield
  - Percentage yield
  - All of above
- 77) In fishes, the heart pumps:
- Pure blood to the body
  - Impure blood to the body
  - Pure blood to the gills
  - Impure blood to the gills
- 78) An object in a satellite orbiting around the earth is weightless because:
- $g = 0$
  - it is falling freely
  - No force acts on it
  - it is far away from the earth
- 79) Which one is the separating technique?
- Deliquescence
  - fluorescence
  - Phosphorescence
  - solvent extraction
- 80) The size of ribosome in prokaryotic cell is:
- 40s
  - 60s
  - 70s
  - 80s
- 81) Light and heavy bodies have equal kinetic energies. Which one has the greater momentum?
- Heavy body
  - Light body
  - Both the same momentum
  - None of these
- 82) Which one is used as stationary phase in paper chromatography?
- Alcohol
  - Adeline
  - Piece of paper
  - Water absorbed on paper
- 83) The molecular formula of chlorophyll - b is:
- $C_{55}H_{70}O_6N_4Mg$
  - $C_{70}H_{55}O_{11}N_5Mg_4$
  - $C_{14}H_{55}O_6N_5Mg_3$
  - $C_{55}H_{76}O_5N_6Mg_2$
- 84) They..... Had a quarrel about their holiday destination. The underlined word is:
- An adverb
  - an adjective
  - an auxiliary
  - a pronoun
- 85) In open organ pipe of length  $l$  is the wavelength of fundamental note is:
- Equal to  $l$
  - equal to  $2L$
  - equal to  $4L$
  - equal to  $\frac{3l}{2}$
- 86) There are three quantum numbers  $n, l$  and  $m$  (all integers) characterizing each solution of the Schrodinger equation. If  $n = 3$ , what is the range of possible values for  $m$ ?
- $\pm 3$
  - $\pm \frac{1}{2}$
  - $\pm 2$
  - Any positive number from 0 to  $n - 1$
- 87) Which of the following is sedentary in adult and active in larval stage?
- Sponge
  - leech
  - Salamander
  - Grasshopper
- 88) The time period of communication satellites is:
- 1 hour
  - 2 Hours
  - 12 hours
  - 24 hours
- 89) In hydronium ion, what is the nature of bond between oxygen of water and hydrogen ion in an acidic solution?
- Covalent
  - Electrovalent
  - hydrogen bond
  - Coordinate covalent bond
- 90) The primers used in polymerase chain reaction has a sequence of bases:
- 20
  - 16
  - 12
  - 8

- 91) When the Newton's rings interference ... is seen from above by means of reflected light. The central spot always appears:
- white
  - Black
  - red
  - green
- 92) Real gases deviate more from ideal behavior at:
- High temperature only
  - High Pressure Only
  - high pressure and low temperature
  - Low pressure and high temperature
- 93) The value between left atrium and left ventricle is:
- Semi lunar value
  - tricuspid value
  - Pulmonary value
  - Bicuspid value
- 94) We waited \_\_\_\_\_ dark.
- Beyond
  - before
  - until
  - unless
- 95) The unit of electric intensity is:
- Volt/meter
  - Newton / coulomb
  - $\frac{joule}{coulomb - meter}$
  - All of above
- 96) Particles involves in an ordinary chemical reaction are:
- Protons
  - Neutrons
  - electrons
  - All of above
- 97) Cup-like ascocarp in fungi is:
- Apothecium
  - Perithecium
  - Hysterothecium
  - Cleistothecium
- 98) If a wave can be polarized, it must be:
- A progressive wave
  - a longitudinal wave
  - a stationary wave
  - a transverse wave
- 99) The phenomenon of cooling on sudden expansion of gases is called.
- Bronsiect effect
  - Joule-Thomson effect
  - Graham's effect
  - Dalton's effect
- 100) Each molecule of  $NADH_2$  entering the electron transport chain produces:
- Four ATPs
  - Two ATPs
  - One ATPs
  - Three ATPs
- 101) The resolving power is expressed as maximum angle  $\alpha_{min}$  between the two sources  $S_1$  and  $S_2$ . If  $\lambda$  is wavelength of light and D is the diameter of lens, then the resolving power is given by:
- $\alpha_{min} \geq 1.22 \frac{\lambda}{D}$
  - $\alpha_{min} m \frac{\lambda}{D}$
  - $\alpha_{min} \geq 2.1 \frac{\lambda}{D}$
  - $\alpha_{min} \leq 1.22 \frac{\lambda}{D}$
- 102) Fizzy drinks contain dissolved  $CO_2$ . The  $CO_2$  reacts with  $H_2O$  to form weak acid which is called:
- Acetic acid
  - Carbonic acid
  - Lactic acid
  - Fomic acid
- 102) A coiled hemoglobin is called:
- Haemocyonine
  - Haemoprotein
  - Myoglobin
  - Haemorrhoids
- 103) "FORGO" is closest in meaning to:
- Run away
  - Do without
  - Safeguard
  - Precede
- 104) Planck's constant has the dimension of:
- Energy
  - Work
  - linear momentum
  - Angular momentum
- 105) Cleaning action of soap is due to:
- Decrease in surface tension of water
  - Viscosity of water
  - High boiling point of water
  - Polarity of water
- 106) In chromosome, the material controlling heredity is:
- Histone
  - RNA
  - DNA
  - All of the above

- 107) The wavelength of sound made from a tuning fork of frequency 330 Hz is nearly:
- a. 330 m                      b. 100 m                      c. 10 m                      d. 1 m
- 108) Polymerization is a process of producing:
- a. High molecular weight compounds from monomers  
b. Low molecular weight compounds from monomers  
c. Intermediate molecular weight compound from monomers  
d. High molecular weight compounds from polymers.
- 109) If father of a baby is hemophilic and mother is a carrier then chances of the baby inheriting the disease will be:
- a. 0%                      b. 50%                      c. 75%                      d. 100%
- 110) Pressure exerted by perfect gas is equal to:
- a.  $\frac{1}{3}$  mean K.E/volume                      b.  $\frac{1}{2}$  mean K.E/volume  
c.  $\frac{2}{3}$  mean K.E/volume                      d. mean K.E/volume
- 111) The charge on electron is equal to:
- a.  $1.7588 \times 10^{19}$  coulomb                      b.  $1.6022 \times 10^{19}$  coulomb  
c.  $1.2057 \times 10^{19}$  coulomb                      d.  $0.6022 \times 10^{19}$  coulomb
- 112) First crystalline hormone is:
- a. Thyroxine                      b. Nor-adrenalin                      c. Adrenalin                      d. All of above
- 113) A fool and his \_\_\_\_\_ are soon parted:
- a. Family                      b. friends                      c. Riches                      d. Money
- 114) A particle performs simple harmonic motion of amplitude 0.02 m and frequency 2.5 Hz what is the: maximum speed?
- a.  $0.008 \text{ m-s}^{-1}$                       b.  $0.314 \text{ m-s}^{-1}$                       c.  $0.125 \text{ m-s}^{-1}$                       d.  $0.05 \text{ m-s}^{-1}$
- 115) Both H ion and helium atom have the same number of:
- a. Proton                      b. Electron                      c. Neutrons                      d. None of above
- 116) A pollen-grain germinates and develops into:
- a. Prothalus                      b. Sporophyte                      c. Micro-Gametophyte                      d. Mega-gametophyte
- 117) A particle of mass moving with a velocity V makes head. One elastic collision with another particle of the same mass and initially at rest. The velocity of the first particle after the collision
- a. 2V                      b. -V                      c. +V                      d. Zero
- 117)  $\text{CO}_2$  is iso-structural with:
- a.  $\text{HgCl}_2$                       b.  $\text{SnCl}_2$                       c.  $\text{C}_2\text{H}_2$                       d.  $\text{NO}_2$
- 118) All of the following belong to mosses Except:
- a. Funaria                      b. Polytrichum                      c. Sphagnum                      d. Club-mosses
- 119) In CRO, the time bases sweep circuit is connected to the:
- a. X-Plate                      b. Y-Plate                      c. Electron gun                      d. Accelerating electrode
- 120) How many sub shells are present in  $n = 3$  shell:
- a. 4                      b. 3                      c. 5                      d. 9
- 121) Alveoli are absent in:
- a. Fishes                      b. Amphibian                      c. Birds                      d. Mammals
- 122) I've hung out the clothes. It's lovely and sunny: if it \_\_\_\_\_ like this \_\_\_\_\_ dry in two hours.
- a. Stayed, would be                      b. Stays, will be  
c. Had stayed, would have been                      d. will stay, will be

- 123) Ampere hour is a unit of:  
 a. Current                      b. Time                      c. Quantity of charge                      d. Power
- 124) All the compounds are inorganic EXCEPT:  
 a.  $\text{CaCO}_3$                       b.  $\text{CaC}_2$                       c. KCN                      d.  $(\text{NH}_2)\text{CO}$
- 125) Which one is isotonic to the surrounding seawater?  
 a. Bony fishes                      b. Shark                      c. Carp                      d. Paramecium
- 126) A 100m long conductor. Carrying current of 2A is at right angle to B of  $0.5 \text{ wb-m}^2$ . The force experienced by the conductor is:  
 a. 1.2N                      b. 3 dynes                      c.  $10^7$  dynes                      d.  $10^5$  dynes
- 127) Molecules of oxygen is diatomic and behaves as:  
 a. Diamagnetic                      b. Paramagnetic  
 c. Ferromagnetic                      d. Anti ferromagnetic
- 128) Sperms of which animal can remain viable for years within the female genital tract?  
 a. Whale                      b. Bat                      c. Camel                      d. Giraffe
- 129) Which type of field is present near a moving electric charge?  
 a. An Electric field only                      b. A magnetic field only  
 c. Both magnetic and electric field                      d. Magnetic and gravitational field
- 130) Which is strongest acid?  
 a. HClO                      b.  $\text{HClO}_2$                       c.  $\text{HClO}_3$                       d.  $\text{HClO}_4$
- 131) Opossum belongs to:  
 a. Metatheria                      b. Eutheria                      c. Theria                      d. Prototheria
- 132) When she came \_\_\_\_\_ senses, she asked to see her son.  
 a. in                      b. to                      c. at                      d. into
- 133) If an electron is accelerated from rest through a potential different of 100 volts. Its final kinetic energy is:  
 a.  $1.6 \times 10^{-18} \text{ J}$                       b.  $1.6 \times 10^{-17} \text{ J}$                       c. 100 J                      d. 100 electron volt
- 134)  $\text{TiCl}_4$  is used as catalyst for the:  
 a. Oxidation of  $\text{C}_2\text{H}_5\text{OH}$  acetaldehyde.                      b. Manufacture of ammonia  
 c. Neutrons                      d. None of the above
- 135) Wheat, maize and rice are the member of family:  
 a. Fabaceae                      b. Solanaceae                      c. Poaceae                      d. Mimosaceae
- 136) The inductance of solenoid depends upon the:  
 a. Area of cross section                      b. Length of solenoid  
 c. Number of turns                      d. all of the above
- 137) The shape or appearance in which a crystal grows is called:  
 a. Crystal geometry                      b. Crystal lattice  
 c. Crystal habit                      d. None of the above
- 138) Growth movement of pollen tube towards the egg is:  
 a. Hydrotropism                      b. Chemotropism                      c. Chemotactic                      d. Seismetactic
- 139) The mean value of sinusoidal emf over cycle is:  
 a. Maximum                      b. Zero                      c. Maximum and minimum                      d. No change in emf
- 140) Species in which the central atom uses  $\text{Sp}$  hybrid orbital in its bonding is:  
 a.  $\text{PH}_3$                       b.  $\text{NH}_3$                       c.  $\text{SbH}_3$                       d.  $\text{C}_2\text{H}_2$

- 141) All of the following are characteristics of enzymes EXCEPT:
- The increase the activation energy
  - They are specific in action
  - They possess specific active site
  - They possess the dimensional shapes
- 142) The boys got \_\_\_\_\_ the bus at the terminus.
- From
  - of
  - off
  - at
- 143) An efficient voltmeter has:
- Low resistance in comparison to circuit resistance
  - High resistance in comparison to circuit resistance.
  - A resistance equal to circuit resistance
  - None of the above
- 144)  $\text{SO}_2$  is responsible for the formation of:
- Acid rain
  - Green house effect
  - Global warming
  - Ozone depletion
- 145) Beside mammals, diaphragm is present in:
- Birds
  - Crocodiles
  - Fishes
  - Toads
- 146) The period of simple pendulum double when:
- Its length is double
  - The mass of the bob is double
  - its length is made four time
  - The mass and length of the pendulum is made two times.
- 147) The isomerism exhibits by  $\text{C}_5\text{H}_{11}\text{OH}$  is:
- Position isomerism
  - Functional group isomerism
  - Chain isomerism
  - all of the above
- 148) Metamerism is found in:
- Earth worm
  - Sponges
  - Snakes
  - Grass hopper
- 149) \_\_\_\_\_
- 150) When the nitrates of Na, Li, Ca and Sr were heated strongly in separate containers, all of them gave reddish brown colour EXCEPT the nitrate of:
- Na
  - Ca
  - Sr
  - Li
- 151) \_\_\_\_\_
- 152) A transformer changes 12 V to 18000 V and there are 6000 turns in the secondary coil. The number of turns in the primary coil are:
- 40
  - 20
  - 30
  - 4
- 153) If a person is injured by the shot of gun and all the pellets could not be removed, they may cause poisoning by:
- Hg
  - Pb
  - Fe
  - Sn
- 154) Early blight of potato is caused by:
- Alternaria – Solani
  - Phytophthora – infestans
  - Erysiphe – graminis
  - Claviceps – purpurea
- 155) In power loss in a capacitor in A.C circuit is:
- $P = V_o I_o$
  - $\langle P \rangle = V_o I_o \sin \theta$
  - $\langle P \rangle = V_o I_o \cos \theta$
  - $\langle P \rangle = \text{Zero}$
- 156) Carboxylic acid contains:
- Hydroxyl group
  - A hydroxyl and carboxyl group
  - A carboxyl group
  - A carboxyl and aldehyde group
- 157) Which one among the following possess a double ringed structure?
- Cytosine
  - Adenine
  - Uracil
  - Thymine



- 158) The truth table of logic function:
- Summarizes its output
  - Tabulates all its input conditions only
  - Displays all its input/output possible
  - is not based on the logic algebra
- 159) A catalyst is more effective when it is in the finely divided state because:
- The valence electrons are easily available
  - This increases the surface area of the catalyst
  - It attains equilibrium quickly
  - All of the above
- 160) Which of the following are the pioneer group to develop true roots and true leaves?
- Psilopsida
  - Sphenopsida
  - Pteropsida
  - Lycopside
- 161) My stay in Gilgit will remain \_\_\_\_\_ fond memory to me.
- a
  - the
  - my
  - any
- 162) The outer electronic configuration of an element "X" is  $ns^2 np^2$ . It belongs to which group of periodic table.
- 2<sup>nd</sup> group
  - 4<sup>th</sup> group
  - 3<sup>rd</sup> group
  - 5<sup>th</sup> group
- 163) An enzyme in gastric juice of many infant mammals that precipitates milk protein is:
- Renin
  - Personage
  - Rennin
  - Gastrin
- 164) A ball of mass 1 gram is moving with a velocity of  $10^3 \text{ m s}^{-1}$ . The De-Broglie wavelength of the ball is:
- $13.26 \times 10^{-36} \text{ m}$
  - $3.315 \times 10^{-34} \text{ m}$
  - $6.63 \times 10^{-34} \text{ m}$
  - $4.97 \times 10^{-36} \text{ m}$
- 165) Which one of the following is used as drying agent?
- $\text{NaHCO}_3$
  - $\text{CaCO}_3 \cdot \text{H}_2\text{O}$
  - $\text{CaCl}_2$  anhydrous
  - $\text{Na}_2\text{SO}_4 \cdot \text{H}_2\text{O}$
- 166) Nematocyst are found in:
- Nematodes
  - Coelenterates
  - Annelids
  - Sponges
- 167) If a diamagnetic substance is brought near north or south pole of a bar magnet, it is:
- Attracted by the poles
  - Attracted by North pole & repelled by South Pole.
  - Attracted by South Pole & repelled by North pole
  - Repelled by the poles
- 168) Super phosphate is made by:
- The acidulation of phosphate rock
  - The alkylation of phosphate rock
  - The alcoholation of phosphate rock
  - The alkali addition with phosphate rock
- 169) Extract embryonic membrane like amnion and chorion appeared for the first time:
- Amphibians
  - Reptiles
  - Birds
  - Fish
- 170) Which one of the following animals possesses an open circulatory system:
- Amoeba
  - Earthworm
  - Grasshopper
  - Man
- 171) When an object slides at constant speed down an inclined plane, the coefficient of friction may be approximately be:
- $\sin \theta$
  - $\cos \theta$
  - $\tan \theta$
  - $\cot \theta$
- 172) Her brother along with her parents \_\_\_\_\_ that she remain in school.
- Insist
  - Insists
  - Are insisting
  - Were insisting
- 173) Which one of the following is the strongest acid?
- $\text{CH}_2\text{Cl}-\text{CH}_2-\text{COOH}$
  - $\text{CHCl}_2\text{COOH}$
  - $\text{CH}_3-\text{COOH}$
  - $\text{CH}_3-\text{CH}_2-\text{COOH}$
- 174) If a single balloon is filled with equal volumes of hydrogen, helium, nitrogen, and neon, which gas will be depleted first?
- Helium
  - Hydrogen
  - Nitrogen
  - Neon

- 175) The glucose is reabsorbed by the
- Proximal convoluted tubule of Nephron
  - Distal convoluted tubule of Nephron
  - Glomerulus
  - Bowman's capsule
- 176) Identify the compound formed when ethylene combines with water in the presence of 10% sulphuric acid and HgSO<sub>4</sub> as catalyst
- Carbonyl
  - Methanol
  - Ethanol
  - Glycol
- 177) Catenation is a process in which carbon shows the properties of making
- Multiple bonds
  - Hybridization
  - Long chain or rings of carbon atoms
  - showing isomerism
- 178) If the area of a circle is equal to its circumference the radius of this circle is:
- 1
  - 2
  - 3
  - 4
- 179) Silver nitrate solution turns blue when a piece of copper is added to it. This is because of
- Oxidation of Ag
  - Reduction of Cu
  - Oxidation of Cu
  - Reduction of Ag
- 180) Where does the esophagus open in the alimentary canal of earthworm?
- Buccal chamber
  - Intestine
  - Rectum
  - Intestinal caecum
- 181) In which of the following solvents are alkenes the most soluble?
- Water
  - Ethyl alcohol
  - Ammonia
  - Carbon tetrachloride
- 182) The process responsible for energy production in animals is:
- Photosynthesis
  - Digestion
  - Respiration
  - Circulation
- 183) The complex force of photosynthesis can be studied by the use of one of the following isotopes
- $^{14}_6C$
  - $^2_1H$
  - $^4_2He$
  - $^{16}_8O$
- 184) Calculate the volume occupied by 2.8 g of nitrogen gas at STP
- 22.4 dm<sup>3</sup>
  - 2.24 dm<sup>3</sup>
  - 4.48 dm<sup>3</sup>
  - 44.8 dm<sup>3</sup>
- 185) A ball is just allowed to fall from the window of a moving train. It will hit the ground following a
- Circular path
  - Hyperbolic path
  - Straight line path
  - Parabolic path
- 186) Which of the following is not present in the fish
- Middle ear
  - Internal ear
  - Gills
  - Fins
- 187) Interpret
- Non \_\_\_\_\_
  - Un \_\_\_\_\_
  - Dis \_\_\_\_\_
  - Mis \_\_\_\_\_
- 188) Lactose, maltose and sucrose are the important
- Polysaccharides
  - Disaccharides
  - Monosaccharides
  - Oligosaccharides
- 189) Continuous absorption spectrum is obtained from
- Excited atoms
  - Excited molecules
  - Ground state molecules
  - Ground state atoms
- 190) In a reaction of ethane and hydrochloric acid, the hydrogen ions act as:
- Nucleophiles
  - Electrophiles
  - Carbon ions
  - Carbanium ions
- 191) The number of vertebrae in vertebral column of man are:
- 37
  - 35
  - 34
  - 33
- 192) A girl sitting on a spinning stool with her legs folded, suddenly out spreads then her angular velocity will:
- Decrease
  - Increase
  - Remain the same
  - First increase and then decrease

X-----X

MEDICAL ENTRANCE TEST 2010

1. Which of the following gives a positive test with felling solution?
  - a. Cu (I)-oxide
  - b. Ethanal
  - c. Acetone
  - d. Phenol
2. The SI unit of inductance is:
  - a. Weber
  - b. Weber meter<sup>-2</sup>
  - c. Tesia
  - d. Henry
3. Which of the following has four chambered heart?
  - a. Lizard Lizard
  - b. Turtle
  - c. Crocodile
  - d. frog
4. A metallic oxide when added to water would most likely form a(n)
  - a. Base
  - b. Acid
  - c. Salt
  - d. Basic anhydride
5. Mother is \_\_\_\_\_ the baby dinner in the kitchen.
  - a. Preparing
  - b. Prepared
  - c. Preparation
  - d. Preparatory
6. In alternating current the average value of current in cycle is:
  - a. Zero
  - b. Constant
  - c. Positive
  - d. Maximum
7. Makeshift is closest in meaning to:
  - a. Impulsive
  - b. Revolving
  - c. Substitute
  - d. Practical
8. The gate which has one input and one output is:
  - a. Not gate
  - b. And gate
  - c. NAND gate
  - d. OR gate
9. The shape of polio virus is:
  - a. Polyhedral shape
  - b. Bad shape
  - c. Tadpole shape
  - d. Golf ball shape
10. The emission or absorption of energy by an atom is represented by  $\Delta E =$ 
  - a.  $h\nu$
  - b.  $\frac{1}{2}mv^2$
  - c.  $mgh$
  - d.  $Mc^2$
11. The attachment of two sub units of ribosome's on a single mRNA is controlled by:
  - a. Mg<sup>2+</sup> ions
  - b. Na<sup>+</sup> ions
  - c. Proteins
  - d. Ribosomal RNA
12. In transistor the emitter to base function is:
  - a. Reversed based
  - b. forward based
  - c. Neutral
  - d. None of these
13. An enzyme in gastric juice of many infant mammals that precipitates milk protein is
  - a. Rennin
  - b. Pepsinogen
  - c. Gastrin
  - d. Renin
14. Swelling of dead bodies in water is due to:
  - a. Osmosis
  - b. Defusion
  - c. Expansion
  - d. Decomposition
15. Equisetum is the living member of:
  - a. Sphenopsida
  - b. Psilopsida
  - c. Pteropsida
  - d. Lycopsida
16. Aldehydes may be distinguished from ketones by the use of:
  - a. Hoffman reagent
  - b. Grignard reagent
  - c. Tollens reagent
  - d. cannizaro reagent
17. We were moved \_\_\_\_\_ the cat struggling to live her kitten.
  - a. See
  - b. saw
  - c. To have seen
  - d. to see
18. Neutrons can be slowed down if the stationary targets are:
  - a. B Particles
  - b. Photons
  - c. Protons
  - d. Atoms
19. Hydra reproduces asexually by:
  - a. Binary fission
  - b. Multiple fission
  - c. Budding
  - d. Regeneration

20. We used pb ( $C_2H_5$ )<sub>4</sub> in the gasoline to reduce
- Consumption of fuel
  - Price of fuel
  - Octane number of fuel
  - Knocking of engine
21. If we pass current through the sucrose solution the galvanometer will not show any deflection because sucrose molecules:
- Move towards cathode
  - Move towards anode
  - React with water
  - Remain neutral
22. To improve the jumping record a long jumper should jump at an angle of:
- 30°
  - 45°
  - 60°
  - 90°
23. All of the following tests are used to identify aldehydes except:
- Talons test
  - Fehling test
  - Bayer test
  - Benedict test
24. At the eleventh hour means:
- One hour before twelve
  - at the last moment
  - At eleven at night
  - eleven hours ago
25. The turn table is a part of:
- Spectrometer
  - Telescope
  - Microscope
  - Interferometer
26. During cellular respiration  $NADH_2$  produces
- 2 ATP
  - 3 ATP
  - 4 ATP
  - 5 ATP
27. What is the concentration of ( $H^+$ ) in  $HNO_3$  acid solution with PH of 3?
- 3
  - 3
  - antilog [3]
  - $10^{-3}$
28. Doppler's effect is applicable to:
- Sound waves
  - Light waves
  - Light waves
  - Both sound and light waves
29. For better resolution and clear visibility through microscope we use:
- Longer wavelength light
  - Shorter wavelength light
  - wavelength has no effect
  - It depends only on design of microscope not on light.
30. An individual has an additional sex chromosome which syndrome does it refer to?
- Down's syndrome
  - Tuner's syndrome
  - Jacobs syndrome
  - Klinefelter's syndrome
31. HIV is also known as:
- AIDS
  - HAV
  - HTLV
  - HBV
32. Elements not found in nature synthesized in nuclear reactions and involving completion of 51 orbital are known as
- Lanthanides
  - Transition elements
  - Rate gases
  - Actinides
33. FORESHADOW is closest in meaning to:
- Dread
  - Disguise
  - Endanger
  - Indicate
34. The rest mass energy of electron is:
- 0.51 joule
  - 1.02 joule
  - $9.11 \times 10^{-32}$  joule
  - $8.2 \times 10^{-14}$  joule
35. A charge moving at a relativistic speed has a speed:
- Equal to speed of light
  - Greater than speed of light
  - Comparable to the speed of light
  - None of these
36. Smaller the Animal:
- More the rate of respiration
  - Less the rate of respiration
  - Rate of respiration has nothing to do with size of animal
  - None of these
37. The Aruba principle governs.
- Coulomb potential
  - Vapour pressure
  - electronic configuration
  - Entropy

38. The dimensions of Planck constant are:  
 a.  $[MLT^2]$       b.  $[ML^2T^{-1}]$       c.  $[MLT^3]$       d.  $[ML^2T^2]$
39. A \_\_\_\_\_ is a person who is dissatisfied and inclined to rebel.  
 a. Delinquent      b. Revolutionary      c. Pessimist      d. Non conformist
40. The effect of the decrease in pressure with increase in speed of the fluid in horizontal tube gives that:  
 a. Torriell's effect      b. Bernoulli's effect  
 c. Venturis effect      d. Doppler effect
41. Which germinal layer develops in digestive system?  
 a. Ectoderm      b. Mesoderm      c. Epidermis      d. Endoderm
42. Which one of the following compounds has a sharp melting point?  
 a. Pure  $C_6H_{12}O_6$       b. Impure NaCl  
 c. Glass      d. Mixture of above two
43. How much will be the length of a simple pendulum if its time period is one second?  
 a. 2.5 m      b. 0.25 m      c. 25 m      d. 0.025 m
44. The center of porphyrins in the head region of hemoglobin is occupied by:  
 a. Iron      b. Magnesium      c. Sodium      d. Potassium
45. To distinguish among primary secondary and tertiary alcohol one would use which of the following method:  
 a. Witting reaction      b. Tollen test  
 c. Lucas test      d. Ninhydrin test
46. Which of the following functional groups in NOT orthopara directing and activating.  
 a. R      b. OH      c. COR      d.  $NH_2$
47. The physical quantity which produces angular acceleration in body.  
 a. Force      b. Centripetal force      c. Impulse      d. Torque
48. Microsporum furfur causes:  
 a. Athletes foot      b. Ring worm      c. Dandruff      d. Ergot
49. For the exothermic reaction  $2NO(g) \rightleftharpoons N_2(g) + O_2(g)$   
 a. Is independent of temperature      b. Increases as temperature increases  
 c. Decreases as temperature increases      d. Varies with addition of  $N_2$  and  $O_2$
50. Which of the following is an example of vector product of two vectors?  
 a. Linear momentum      b. Angular momentum      c. Force      d. Electric Flux
51. First crystalline hormone is:  
 a. Thyroxine      b. Noradrenalin      c. Adrenalin      d. All of above
52. If  $\vec{A} = 2\hat{i} + \hat{j} + 2\hat{k}$  the its magnitude is:  
 a. 9      b. 5      c. 3      d. 1
53. Limbic system in forebrain consists of:  
 a. Hypothalamus      b. Hippocampus      c. Amygdala      d. All of above
54. Which one of the following diseases is due to point mutation?  
 a. Down syndrome      b. Klinefelter syndrome.  
 c. Phenylketonuria      d. Turner syndrome
55. Which of the following NOT a member of transition metal?  
 a. Scandium family      b. Iron family      c. Titanium family      d. Beryllium family



56. The amount of heat energy required to raise the temperature of body through 1 k is called.
  - a. Specific heat
  - b. Molar specific heat
  - c. Heat capacity
  - d. Heat of vaporization
57. Opening of flower buds and leaf buds is called:
  - a. Epinsaty
  - b. Thrmionsaty
  - c. Photosasty
  - d. Seismonasty
58. Natural chlorine occurs as a mixture of isotopes if a mixture contains 75%  $\text{Cl}^{35}$  and 25%  $\text{Cl}^{37}$  what will be its correct atomic weight?
  - a. 35.50
  - b. 34.50
  - c. 72.00
  - d. 70.00
59. Mercury is 13.6 times as dense as water.
  - a. Qualitative
  - b. Quantitative
  - c. Both A and B
  - d. None of these
60. When sound waves move from one medium to other medium the quantity which remains unchanged is:
  - a. Wavelength
  - b. Frequency
  - c. Speed
  - d. Intensity
61. A cloned baby sheep Dolly was identical to the parent that:
  - a. Gave birth to the dolly
  - b. Donated reproductive cells.
  - c. Donated somatic cell
  - d. Both A and B
62. What is the ionic strength of 0.01 M Barium Chloride solution?
  - a. 0.03
  - b. 0.02
  - c. 0.04
  - d. 0.01
63. When everyone hung \_\_\_\_\_ the leader picked on the most suitable person to do the job.
  - a. Out
  - b. About
  - c. Back
  - d. On
64. The two metals having same resistance can be differentiated from their value of:
  - a. Resistances
  - b. Conductive
  - c. Temperature coefficient of resistivity
  - d. Conductivity
65. Which one of the following animals has no alimentary canal?
  - a. Ascaris
  - b. Pin worm
  - c. Planaria
  - d. Tape worm
66. A group of scientists discovered a new element which gives the properties of inert gases they should place new element in periodic table with the element of:
  - a. s-block
  - b. d-block
  - c. f-block
  - d. p-block
67. The ratio of the capacitance of the capacitor having dielectric to the capacitance of the capacitor having free space is the dielectric:
  - a. Relative permittivity
  - b. Permittivity
  - c. Permeability
  - d. Electric polarization
68. In step up transformer when the alternating voltage increases then the alternating current.
  - a. Will increase
  - b. will decrease
  - c. will not change
  - d. None of above
69. Besides mammalian diaphragm is present in:
  - a. Birds
  - b. Crocodile
  - c. Fishes
  - d. Toads
70. Primary cells are used in calculators for long service life the desirable quality of the cell is:
  - a. Low energy densities
  - b. No self discharge rates
  - c. High self discharge rates
  - d. High energy densities
71. For the production of electromagnetic waves the charges used are:
  - a. Stationary charges
  - b. Charges moving with uniform
  - c. Accelerating charges
  - d. All of the above
72. The formula  $\text{CH}_3(\text{CH}_2)_{16}\text{COO}^-\text{Na}^+$  represents a member of the class of compound which are known as:
  - a. Steroids
  - b. Soaps
  - c. Carbohydrates
  - d. Vitamins
73. All types of plastids are produced from:
  - a. Chlorophiastids
  - b. Proplastids
  - c. Chromoplastids
  - d. Leucoplastids

74. Which of the following has the same number of electrons as an alpha particle?  
 a. H                      b.  $H_2$                       c.  $H^+$                       d.  $H_2O$
75. Which of the following groups is considered to have a deactivating effect during aromatic substitution?  
 a.  $-OH$                       b.  $-OR$                       c.  $-NH_2$                       d.  $-CN$
76. The pilot having a weight of 686N diving down with an acceleration of  $9.8m\ sec^{-2}$  its apparent weight is:  
 a. 343N                      b. 1372 N                      c. 686 N                      d. Zero
77. Sperms of which animal can remain viable for years within the female genital tract?  
 a. Bat                      b. whale                      c. Camel                      d. Giraffe
78. Water has a vapour pressure of 23.75 at  $25^\circ C$  what is the vapour pressure of solution sucrose if its mole fraction is 0.25?  
 a. 15.2 torr                      b. 17.8 torr                      c. 23.8 torr                      d. 29.7 torr
79. The maximum drag force on a sphere falling with zero acceleration is 9.8 N its real weight is:  
 a. Zero                      b. 9.8 N                      c. 4.9 N                      d. 19.6 N
80. When a body moves against the force of friction on a horizontal plane the work done by the body  
 a. Negative                      b. Positive                      c. Zero                      d. Maximum and Positive
81. All of the following plants possess actinomorphic flowers EXCEPT:  
 a. Rose                      b. Potato                      c. Apple                      d. Pea
82. The temperature at which the resistance of conductor approaches to zero is called:  
 a. Normal temperature                      b. Critical temperature                      c. Absolute temperature                      d. Curie temperature
83. Live attenuated vaccines are used to treat all of the following diseases EXCEPT?  
 a. Cholera and rabies                      b. Typhoid and plague  
 c. Mumps and measles                      d. Yellow fever and rubella
84. Reactant formation in an endothermic reaction would be favoured by which of the following:  
 a. Increase in temperature                      b. Decrease in temperature  
 c. No change in temperature                      d. First increase and then decrease in temperature
85. In house circuit all the electric appliances are connected in parallel between main line and neutral line appliances will have:  
 a. Same current                      b. Same power  
 c. Different potential and same current                      d. Same potential difference
86. Which of the following animals is sedentary in adult and active in larval stage?  
 a. Sponge                      b. Leech                      c. Salamander                      d. Grasshopper
87. Chlorofluorocarbons are mainly responsible for:  
 a. Air pollution                      b. water pollution  
 c. Acid rain                      d. Ozone layer depletion
88. A body weights 72 kg on the surface of the earth is weights on the surface of the moon will be:  
 a. 72 kg                      b. 12 kg                      c. 24 kg                      d. 0 kg
89. Total confinement of light for propagation in the optical fiber is obtained by:  
 a. Total internal reflection                      b. Continuous refraction  
 c. Both A and B                      d. None of these
90. Food is preserved in the form of glycogen by:  
 a. Plants                      b. Animals                      c. Cyano bacteria                      d. Both B and C
91. Hydrolysis of  $Al_4C_3$  gives  
 a.  $CH_4$                       b.  $C_2H_6$                       c.  $C_3H_4$                       d.  $C_4H_{10}$

92. Rashid spoke \_\_\_\_\_ that he was praised by all the debaters.
- Well
  - As well
  - Very well
  - So well
93. The temperature scale which is independent of the nature of the working substance is:
- Celsius scale
  - Fahrenheit scale
  - Centigrade scale
  - Thermodynamic scale
94. Urea formation occurs in:
- Kidney
  - Liver
  - Spleen
  - Lungs
95. The term gene was coined by:
- Johnson
  - Corren
  - Tschmarch
  - Purkinje
96. In which of the following compounds carbon is sp hybridized?
- $C_2H_6$
  - $C_3H_6$
  - $C_4H_6$
  - $C_4H_8$
97. The thief ran \_\_\_\_\_ the street to the other side and hid under bridge.
- Over
  - Across
  - Along
  - Beside
98. The angle subtended by a vector  $\vec{A} = i - j$  with x-axis is:
- $45^\circ$
  - $135^\circ$
  - $225^\circ$
  - $315^\circ$
99. All of the following are gametophyte plants EXCEPT:
- Liver wort
  - Equisetum
  - Funaria
  - Polytrichum
100. Values of ionic product  $K_w$  are  $0.64 \times 10^{-14}$  at  $18^\circ C$ ,  $1 \times 10^{-14}$  at  $25^\circ C$  from this may be derived that:
- Endothermic process
  - Exothermic process
  - Vaporization process
  - Change of  $H_2O$  into  $O_2$  and  $H_2$
100. Newton second law of motion establishes relationship between:
- Force and acceleration
  - Mass and force
  - Mass and velocity
  - Acceleration and mass
101. If father of a baby is hemophilic and mother is a carrier then chances of the baby in inheriting the disease will be:
- 0%
  - 50%
  - 75%
  - 100%
102. A constellation is made up of stars a troupe is made up of:
- Starlets
  - Speakers
  - Actors
  - beggars
103. Condensation of chromosomes reaches to its peak during early:
- Prophase
  - Metaphase
  - Anaphase
  - Telophase
104. Which of the following is a characteristic of an isothermal change?
- Enthalpy is constant
  - Temperature is constant
  - Pressure is constant
  - No heat enters or leaves the system
105. The traffic signals are red while the eyes are more sensitive to yellow because:
- Yellow has less speed.
  - Red light refracts less due to its long wavelength
  - Actors
  - Beggars
106. The hormone that causes seed and bud dormancy in plants is called:
- Auxins
  - Ethylene
  - Abscisic Acid
  - Gibberellins
107. If a Cu bearing material weighting 40g yield 5g CuO (mw. 76.55) the percentage of Cu (at.wt. 63.55) in the sample is:
- $5/40 \times 100$
  - $40/5 \times 79.55/63 \times 100$
  - $5/40 \times 79.55/63.55 \times 100$
  - $5/40 \times 79.55/63.55 \times 100$
108. He is rather an \_\_\_\_\_ teacher he never accepts the students excuses:
- Incredulous
  - Unbelievable
  - Interesting
  - Indiscriminate

109. The device which can be used for the precise measurement of wavelength is:
- Grating plate
  - Polaroid
  - Prism
  - Michelson interferometer
110. All of the following are non renewable resources of energy EXCEPT.
- Forests
  - Iron
  - Petroleum
  - Natural gas
111. Acids are classified as monoprotic or polyprotic which of the following is a polyprotic acid.
- $\text{CH}_3\text{CO}_2\text{H(aq)}$
  - $\text{HOCl(aq)}$
  - $\text{HCHO}_2$
  - $\text{H}_2\text{CO}_3$
112. If a tunnel is bored through the centre of the earth and a stone is dropped into it then the:
- Stone will stop at the center of the earth
  - Stone will move out from other side of the tunnel
  - Stone will perform simple harmonic motion
  - None of these
113. Tissue plasminogen activator (TPA) is used for:
- Treating anemia
  - Bonemarrow transplant
  - Dissolving blood clot
  - Treatment of cancer
114. A gas at STP contains only  $6.023 \times 10^{23}$  atoms and is monatomic it will occupy
- 1.2L
  - 22.4L
  - 30.5L
  - 44.8L
115. Gamma rays have high penetrating power than  $\alpha$  &  $\beta$  rays due to:
- No charge
  - Non material nature
  - Small size
  - Lighter particles
116. The heat engine operating in reverse is called:
- Electric generator
  - Refrigerator
  - Cannot engine
  - Electric motor
117. Which of the following is present in the centre of porphyrine ring of chlorophyll?
- Iron
  - Sodium
  - Potassium
  - Magnesium
118. A chemical system is sealed in a strong rigid container at room temp and then heated vigorously change in work done during process is:
- Positive
  - Negative
  - Zero
  - Constant
119. The capacitive reactance of the AC circuit increase:
- By increasing the frequency of AC
  - By decreasing the frequency of AC
  - Does not depend upon the frequency of AC voltage
  - None of these
120. Which of the following is included in protostome?
- Amphioxus
  - Sea horse
  - Cheatopterus
  - Sea cucumber
121. Carboxylic acid reacts readily with alcohols in the presence of catalytic amounts of mineral acids to yield compound called.
- Azides
  - Esters
  - Ketones
  - Ethers
122. To have an old head on young shoulders means:
- To be wiser than one's age
  - To be young but appear old
  - To have ache in the shoulders
  - To be old but appear young
123. The force exerted on a wire of length one meter carrying a current of one ampere lying normal to magnetic field is called.
- Magnetic flux
  - Magnetic flux density
  - Magnetic permeability
  - None of these
124. The charge of electron was determined by the effect of electric field on rate of fall of oil droplets under gravity this was done by:
- JJ Thomson
  - E Rutherford
  - R Milliken
  - WC Roentgen
125. The force on electron in electric field of  $10^8 \text{ NC}^{-1}$ :
- $1.6 \times 10^{-14}$
  - $\sim 1.6 \times 10^{-8}$
  - $1.6 \times 10^{-10}$
  - $1.6 \times 10^{-11}$



126. Book lungs may be found in which of the following  
 a. Clam worm                      b. Spider                      c. Silver fish                      d. Leech
127. The current produced in oil due to induced emf depends upon.  
 a. Area of the coil                      b. Shape of coil  
 c. Turns of coil                      d. Strength of magnetic field in which the coil rotates
128. All cell membranes are composed of:  
 a. Proteins                      b. Lipids                      c. Lipo protein                      d. Cellulose
129. Metals are good conductors of electricity because they contain:  
 a. Large number of freely mobile electrons                      b. Large number of bound electrons  
 c. Small number of free electrons                      d. Small number of bound electrons
130. Who stated this hypothesis? Mosquitoes are involved in the spread of malaria.  
 a. Ronald                      b. AFA King                      c. Laveran                      d. Aristotle
131. The simplest oxygen producing organism are:  
 a. Photosynthetic bacteria                      b. Autotrophic bacteria  
 c. Cyanobacteria                      d. Chlamydomonas
132. Which is the first step taken when metals are obtained from sulphide ore:  
 a. Smelting                      b. Reasing                      c. Reduction                      d. Refining
133. The life time of an ordinary excited state is:  
 a.  $10^{-35}$  sec                      b.  $10^{-8}$  sec                      c.  $10^{-3}$  sec                      d. 0.1 sec
134. Hunger centers are located in:  
 a. Hypothalamus                      b. Cerebellum                      c. Medulla                      d. Mid brain
135. Which of the following is not a Polymer?  
 a. Plastic                      b. Petroleum                      c. Starch                      d. Natural rubber
136. The device used for detection of isotopes is:  
 a. Mass spectrometer                      b. Cyclotron                      c. Betatron                      d. Reactor
137. Do you have \_\_\_\_\_ difficulty with the language?  
 a. Any                      b. Some                      c. Every                      d. Many
138. The best shield against x-rays to absorb it is:  
 a. Lead                      b. Steel                      c. Iron                      d. Copper
139. Heart muscles are called:  
 a. Smooth muscles                      b. Myogenic muscles  
 c. Striated muscles                      d. Skeletal muscles
140. A nucleophile is  
 a. Lewis acid                      b. Bronsted acid                      c. Bronsted base                      d. Lewis base
141. The minimum number of unequal forces whose vector sum can be zero are  
 a. One                      b. Two                      c. Three
142. If an organism adopts saprophytic mode of nutrition during part of its life span, it is called:  
 a. Obligate parasite                      b. Facultative parasite  
 c. Obligate saprophyte                      d. Facultative saprophyte
143. Which of the following ions can act as a bronsted acid and base in water  
 a.  $\text{HCO}^-$                       b.  $\text{CN}^-$                       c.  $\text{NO}_3^-$                       d.  $\text{PO}_4^{3-}$
144. Here are your shoes, I \_\_\_\_\_ them  
 a. Just clean                      b. Just cleaned                      c. Have just cleaned                      d. Have just cleaned



145. Which of the following bonds (.....) is the least polar?  
 a. B.....Cl      b. C.....Cl      c. C.....I      d. C.....Br
146. The dimensions of the gravitational constant are:  
 a.  $[M^2 L^2 T]$       b.  $[M^{-1} L^3 T^2]$       c.  $[M^2 L^{-2} T^{-2}]$       d.  $[ML^{-2} T^1]$
147. During the development of chick peripheral part of the blastoderm lies unseparated from the yolk and from:  
 a. Area pellucida      b. Area opaca      c. Notochord      d. Primitive streak
148. In which of the following a covalent bond is not likely to exist?  
 a. Br      b. SiF      c. CaO      d. SeH<sub>2</sub>
149. The stranger \_\_\_\_\_ the little girl with some sweets.  
 a. Deceived      b. Attracted      c. Enticed      d. Praised
150. The wave velocity in any medium depends upon  
 a. Elasticity      b. Density      c. Homogeneity      d. All of the above
151. Phloem tissues are composed of:  
 a. Tracheids      b. Trachea      c. Colleen chyma      d. Sieve tubes
152. Monotropa is a  
 a. Total parasite      b. total saprophyte      c. Partial parasite      d. Partial saprophyte
153. Which of the following oxides has the most basic character?  
 a. Na<sub>2</sub>O      b. MgO      c. Al<sub>2</sub>O<sub>3</sub>      d. P<sub>2</sub>O<sub>5</sub>
154. The heating and cooking of food evently by mocro wave oven is an example of:  
 a. Resonance      b. Specific heat  
 c. Damped oscillation      d. None of these
155. Consider chemical reaction  $2Cl(g) \rightleftharpoons Cl_2(g)$ . The extend of completing this reaction depends upon the magnitude of Kc and shows that equilibrium mixture will consist almost of Cl molecules when.  
 a. Kc is very large      b. Kc is very small  
 c. Kc is neither very small nor very large      d. Kc is equal to 1
156. When a body mvoes in a circle the angle between its linear velocity and angular velocity is always:  
 a. 0°      b. 189°      c. 360°      d. 90°
157. Extra embryonic membranes like amnion and chorion appeared for the first time in.  
 a. Fish      b. Amphibian      c. Reptiles      d. None
158. Which one of the following characteritistics is not usually attributed to Ionic substances?  
 a. High melting point      b. Deform when struck  
 c. Fragility      d. Crystalline
159. The actress traveled \_\_\_\_\_ to avoid being recognized by her fans.  
 a. Unknown      b. Concealed      c. Incognito      d. Anonymously
160. Resistive forces are:  
 a. None conservative      b. Conservatice  
 c. Both conservative and none conservative      d. None of the above
161. Which one is microsporangium?  
 a. Pollen grains      b. Stamens      c. Pollen sacs      d. Female cone
162. The device in which the controlled fission chain reaction is maintained is:  
 a. Cyclotron      b. Betatron      c. Accelerator      d. Nuclear reactor

163. A machine that works like kidney for the removal of nitrogenous wastes from the blood is called:  
 a. Lithotripter      b. Heomometer      c. Dialyzer      d. None of above
164. The bond form between boron and Hydrogen is:  
 a. Ionic      b. Covalent  
 c. Coordinate covalent none of the above      d. None of the above
165. You should not swim \_\_\_\_\_ a meal.  
 a. After      b. Over      c. About      d. Scross
166. ....
167. Yeast belongs to the phylum  
 a. Zygomycota      b. Ascomycota      c. Basidiomycota      d. Deutromycota
168. Carotenoid pigments are present in:  
 a. Euglenophyta      b. Pyrrophyta      c. Chrysophyta      d. Both A & B
169. Which is good quality iron are containing low phosphorus content?  
 a. Hemattite      b. Limonite      c. Siderite      d. Magnetite
170. The scientist who was awarded noble prize for explaining photoelectric effect.  
 a. Max Planck      b. Compton      c. Lousie      d. Einstein
171. Salmonella typhosa is a  
 a. Coccus bacterium      b. Bacillus bacterium  
 c. Spirillus bacterium      d. Nitrobacterium
172. Which is the correct formula of ammonium carbonate?  
 a.  $\text{H}_2\text{NCONH}_2$       b.  $\text{NH}_4\text{COONH}_4$       c.  $\text{H}_2\text{NCOONH}_2$       d.  $\text{NH}_2\text{COONH}_4$
173. The energy of electron in the excited state  $n = 4$  in hydrogen  
 a.  $-13.6\text{eV}$       b.  $-3.4\text{eV}$       c.  $-0.85\text{eV}$       d.  $-1.5\text{eV}$
174. Increased production of RBCs is called:  
 a. Leukaemia      b. Polycythemia      c. Edema      d. Anemia
175. Carboxylic acid forms alcohol in presence of  $\text{LiAlH}_4$  and the process is:  
 a. Reduction      b. Oxidation      c. Hydrolysis      d. None of above
176. Rhythmicity of respiration is maintained by:  
 a. The cardiac center      b. Ventilator center      c. Pons      d. Carotid sinus
177. Which of the following is NOT considered to be an oxidizing agent?  
 a.  $\text{MnO}_2$       b.  $\text{Cl}_2$       c.  $\text{NaOH}$       d.  $\text{Na}_2\text{O}_2$
178. The instrument that is used to determine the weight of proton as well as positive ion and is capable of recording its result as photograph is called:  
 a. Mass spectroscopy      b. Atomic Spectroscope  
 c. Spectrophotographic analyzer      d. Spectrophotometer
179. He has \_\_\_\_\_ his pen and is buying another one:  
 a. ose      b. Lost      c. Loser      d. Lusted
180. In CRO the time base circuit is connected to:  
 a. Vertical plates      b. Electron gun  
 c. Horizontal plates      d. Fluorescent screen
181. Aestivation is also known as:  
 a. Spring sleep      b. Winter sleep      c. Autumn sleep      d. Summer sleep
182. Displacement reaction that proceeds by the  $\text{SN}_2$  mechanism are most successful with compounds that are:  
 a. Neopentyl system      b. Tertiary compounds with no branch  
 c. Secondary halides      d. Primary compound with no branch at B - Carbon

183. A wire of length 10 cm lying normal to magnetic field of 0.5 T is experiencing a force of 5 N. the current in the wire is:  
 a. 10A                      b. 50 A                      c. 100 A                      d. 500 A
184. All of the following are polysaccharides EXCEPT:  
 a. Cellulose                      b. Glycogen                      c. Starch                      d. Lactose
185. The substances which under go deformation with small force are called:  
 a. Elastic substances                      b. Inelastic substances  
 c. Diamagnetic substances                      d. Ductile substances
186. Which of the following is swimming bird?  
 a. Penguin                      b. Ostrich                      c. Hawk                      d. Kiwi
187. The expression for a w in the first law of thermodynamic if negative implies all of the following EXCEPT:  
 a. Total internal energy has decreased                      b. system has lost heat  
 c. Work done by the system                      d. Work done on the system
188. ....
189. In a Galvanic cell the following reaction takes place:  $2H_2O \rightleftharpoons O_2 + 4H^+ + 4e^-$  it occurs at the  
 a. Cathode                      b. Anode  
 c. External conductor                      d. Cathode and anode
190. Fatty acids are converted into carbohydrates by  
 a. Glyoxisome                      b. Bile juice                      c. Pancreatic Juice                      d. Lysosomes
191. The military coup in the country brought an end to \_\_\_\_\_ rule by the emperor  
 a. Omnipotent                      b. Almighty                      c. Dictatorial                      d. Monopolistic
192. ....
193. The amount of energy required to break the nucleus into constituent nucleons is called:  
 a. Excitation energy                      b. Ionization energy  
 c. Binding energy                      d. Work function
194. When the kidney fails to form urine the condition is called:  
 a. Nephritis                      b. Nephrosis                      c. Ptosis                      d. Anuria
195. A sample of gas has a volume of 450 ml at 270 °C when its temperature is increased to its volume becomes:  
 a. 480 ml                      b. 460 ml                      c. 470 ml                      d. 475 ml
196. When  $\alpha$  particle is emitted by radium  ${}_{88}^{226}\text{Ra}$  the daughter nucleus is radon the mass number and charge number of which will be:  
 a.  ${}_{90}^{220}\text{Rn}$                       b.  ${}_{86}^{222}\text{Rn}$                       c.  ${}_{89}^{226}\text{Rn}$                       d.  ${}_{90}^{222}\text{Rn}$
197. The malarial patient feels chill and fever when:  
 a. Merozoites increase their population in RBC and burst open the RBC  
 b. Sporozoites enter the blood stream  
 c. Sporozoites enter the liver cells.                      d. Merozoites come out the liver cells.
198. Which is an isomer of ethanol?  
 a.  $\text{CH}_3\text{OH}$                       b.  $\text{C}_2\text{H}_5\text{OCH}_3$                       c.  $\text{CH}_3\text{OCH}_3$                       d.  $\text{C}_2\text{H}_5\text{OC}_2\text{H}_5$
199. 2.3 g of ethanol ( $\text{C}_2\text{H}_5\text{OH}$ ) is added to 500g of water determine the molality of the resulting solution:  
 a. 0.01 molal                      b. 0.1 molal                      c. 1.1 molal                      d. 1.0 molal
200. ....

X-----X

MEDICAL QUESTION PAPER 2011

1. We need \_\_\_\_\_ guidelines to start with:  
a. A few                      b. any                      c. little                      d. some
2. The angle subtended at the centre of a sphere by its surface area is equal to:  
a.  $\frac{4}{3}\pi$  radian                      b.  $\frac{4}{3}\pi$  Steradian                      c.  $4\pi$  radian                      d.  $4\pi$  Steradian
3. The anion size are larger than its atomic size because:  
a. the addition of electron occupies more space                      b. It increases the effective nuclear charge  
c. the repulsion between electrons increases with the addition of electron  
d. the attraction between electrons the nucleus increases.
4. Which of the following diseases is NOT caused by bacteria?  
a. tetanus                      b. small pox                      c. tuberculosis                      d. diphtheria
5.  $[M^0 L^0 T^0]$  are the dimensions of:  
a. strain                      b. refractive index                      c. magnification                      d. All of these
6. Which one would you class it as more metallic in character?  
a. As                      b. Bi                      c. C                      d. Sb
7. Round worms, which have body cavities are partially lined with mesoderm are classified as:  
a. Acaelomate                      b. celomates                      c. Pseudo coelomates                      d. Deuterostomes
8. The magnitude of the resultant of two forces is 2F. if the magnitude of each force is F, Then the angle between these forces is:  
a.  $0^\circ$                       b.  $90^\circ$                       c.  $120^\circ$                       d.  $180^\circ$
9. Hydration energy is the heat evolved or absorbed when:  
a. One mole of gaseous ions is dissolved in one mole of water  
b. One mole of ions in solid state is dissolved in one mole of water.  
c. One mole of gaseous ions is dissolved in water to give infinitely dilute solution.  
d. One mole of ions is solid state is dissolved to form concentrated solution.
10. The hypothesis is Ronald Ross relating to malaria was:  
a. Plasmodia are the cause of malaria.                      B. Bad air is involved in the spread of malaria  
c. Mosquitoes are possible carrier of plasmodia                      d. Malaria is caused by bad air coming from marshy.
11. The authorities have \_\_\_\_\_ that the plane to Beirut was hijacked over the Indian ocean  
a. Assured                      b. confirmed                      c. Committed                      d. ensured
12.  $\hat{j} \cdot \left( \hat{j} \times \hat{j} \right)$  is equal to  
a. -1                      b. Zero                      c. 1                      d. 2
13. The behavior of  $PbCl_2$  and  $PbCl_4$  respectively are:  
a. Ionic and covalent                      b. covalent and ionic  
c. Covalent & coordinate covalent                      d. ionic and coordinate covalent
14. Crustaceans are the only arthropods that have:  
a. Chitin in their exoskeleton                      b. chelicetae  
c. Three pairs of legs                      d. two pairs of antennae
15. Three vectors of equal magnitude are acting on the three sides of an equilateral triangle. The magnitude of their resultant is:  
a. Zero                      b. 3                      c.  $\sqrt{3}$                       d. 1.73

16. Select the correct order in ionic behavior:
  - a.  $AlF_3 > AlBr_3 > AlCl_3 > AlI_3$ ,
  - b.  $AlCl_3 > AlF_3 > AlBr_3 > AlI_3$ ,
  - c.  $AlCl_3 > AlBr_3 > AlI_3 > AlF_3$ ,
  - d.  $AlF_3 > AlCl_3 > AlBr_3 > AlI_3$
17. A cloned baby sheep "Dolly" was attributed to
  - a. Four Parents
  - b. Three Parents
  - c. Two Parents
  - d. One parent only
18. The physical quantity which produces angular acceleration in the body is:
  - a. Force
  - b. Moment of Inertia
  - c. Impulse
  - d. Torque
19. Select the most stable covalent hydride:
  - a.  $BiH_3$
  - b.  $NH_3$
  - c.  $HF$
  - d.  $SbH_3$
20. In spiders the organs that contain the silk glands are called:
  - a. Spinnerets
  - b. carapaces
  - c. medriporite
  - d. tube feet
21. She has let \_\_\_\_\_ her house fully furnished to a Korean couple:
  - a. out
  - b. at
  - c. up
  - d. in
22. the point at which an applied force produces linear motion but no rotatory motion is:
  - a. mid-point
  - b. centre of gravity
  - c. optical centre
  - d. pole
23. Potassium is found in nature as carnallite, its composition is:
  - a.  $KAISi_3O_4$
  - b.  $KClMgCl_2 \cdot 6H_2O$
  - c.  $KCl$
  - d.  $KCl \cdot Al_2O_3 \cdot 2H_2O$
24. ....
25. A ball is thrown vertically upward with a velocity of 98 m/s. if it takes 10 seconds to reach the highest point then the acceleration of the ball is:
  - a.  $9.8m/s^2$
  - b.  $980m/s^2$
  - c.  $98m/s^2$
  - d.  $-9.8m/s^2$
26. Fajan's rule states that small highly charged ions tend to form more:
  - a. Ionic compounds
  - b. polymeric compounds
  - c. covalent compounds
  - d. coordination compound
27. Which of the following bird structures are especially adapted to support flight?
  - a. Cloacas
  - b. bills
  - c. Gizzard
  - d. Chest muscles
28. A man throws a ball vertically upward in a compartment of an acceleration train. The ball will fall
  - a. In front of him
  - b. in his hand
  - c. behind him
  - d. beside him
29. Beryllium, a member of alkaline earth metal, is almost as hard as:
  - a. Calcium
  - b. Potassium
  - c. Iron
  - d. Magnesium
30. Which of the following is composed of lipids?
  - a. Some hormones
  - b. Enzymes
  - c. Skin tendons
  - d. insulin
31. I have no \_\_\_\_\_ to listen to the budget speech.
  - a. Trouble
  - b. convenience
  - c. patience
  - d. perseverance
32. A bomber drops a bomb, when it is vertically above the target It misses the target because of:
  - a. Vertical component of the velocity of bomber
  - b. Force of gravity
  - c. acceleration of the bomber
  - d. Horizontal component of the velocity of bomber.
33. Select the correct statement.
  - a. All alkali metal hydroxides are stable to heat
  - b. All alkali metal hydroxides are unstable to heat.
  - c. All alkali metal hydroxides are stable to heat except  $CSOH$
  - d. All alkali metal hydroxides are stable to heat except  $LiOH$ .

34. The rate of breathing of a child of 5 years is about:  
 a. 44 times / minute      b. 40 times / minute      c. 25 times / minute      d. 20 times / minute
35. The property of the moving object by virtue of which it exerts force on the object that tries to slow it is:  
 a. Inertia of the body      b. Quantity of motion of body  
 c. Acceleration of body      d. All of these
36. Refractory bricks used for furnace lining are formed by mixing and drying:  
 a. MgO and clay      b.  $MgCO_3$  and clay  
 c.  $MgSO_4$  and clay      d.  $MgCO_3$   $CaCO_3$
37. The middle lamella of cell-wall is composed of:  
 a. Cellulose      b. pectin      c. Lignin      d. Murein
38. The dot product of force and velocity is equal to:  
 a. Power      b. Impulse      c. couple      d. Momentum
39. The electronegativity of [I] A element first decreases and then increase. This behavior is due to poor shielding of:  
 a. S - electron      b. P - electron      c. d - electron      d. f - electron
40. Nicotine in tobacco:  
 a. Decreases the heart rate      b. decreases blood pressure  
 c. block the transport of oxygen.      d. paralyzes cilia
41. Your \_\_\_\_\_ too long, you had better to go to the hairdresser today.  
 a. Hair is      b. hair are      c. hairs are      d. hairs is
42. The escape velocity from the earth gravitational field depends upon:  
 a. Rotation of earth      b. mass of body      c. radius of earth      d. mass of earth
43. Sodium tetra borate  $Na_2B_4O_7 \cdot 10H_2O$  is  
 a. Colemanite      b. Borax      c. Diaspore      d. bauxite
44. Stream of chloroplast carries the fixation of:  
 a. Nitrogen      b. Oxygen      c. Carbon monoxide      d. Carbon dioxide
45. If the velocity of a body becomes half, the kinetic energy of the body will become:  
 a. On fourth      b. double      c. four times      d. half
46.  $2Al_{(s)} + NaOH_{(aq)} + 2H_2O \rightarrow 2NaAlO_{2(aq)} + 3H_{2(g)}$   
 The above reaction is slow in the start but speeds up after sometimes. This is because of:  
 a. The reaction is exothermic and the heat generated speeds up the reaction  
 b. The hydrogen liberated during the reaction act as catalyst.  
 c. The protective coat of oxide layer of the aluminum dissolves and the metal surface is exposed to the reactant.  
 d. Sodium aluminates is highly soluble, therefore it helps the reaction move in the forward direction.
47. The value between right atrium and right ventricle is called:  
 a. Bicuspid value      b. tricuspid value  
 c. pulmonary value      d. semi lunar value
48. The angular velocity for daily rotation of the earth is:  
 a.  $\frac{\pi}{3} \text{radian hr}^{-1}$       b.  $\frac{\pi}{6} \text{radian hr}^{-1}$       c.  $\frac{\pi}{12} \text{radian hr}^{-1}$       d.  $12\pi \text{radian hr}^{-1}$
49. Sodium carbonate when fused with sand forms sodium silicate which is commonly known's as:  
 a. Soda glass      b. water glass      c. Jinna glass      d. Pyrex glass
50. Anthocyanins are various types of colorful pigment present in the:  
 a. Chloroplasts      b. chromoplasts      c. leucoplasts      d. vacuoles



51. You can always count on me. I will not let you
  - a. Alone
  - b. down
  - c. off
  - d. through
52. The weight of a pilot when diving down in a jet plane with an acceleration of  $9.8 \text{ m/s}^2$  will become
  - a. Double
  - b. half
  - c. Negative
  - d. Zero
53. Silicones are resisted to chemical attack and are used in/as:
  - a. Paints
  - b. vernishes
  - c. water proofing fabrics
  - d. all of the above
54. Anti bodies are produced by:
  - a. Red blood cells
  - b. platelets
  - c. B-lymphocytes
  - d. Hormones
55. The Geostationary satellites are:
  - a. Stationary
  - b. Rotating with the speed of earth
  - c. Rotating very fastly
  - d. Rotating very slowly
56. Select the oxide which is in the solid state at room temperature.
  - a.  $\text{N}_2\text{O}_5$
  - b.  $\text{N}_2\text{O}$
  - c.  $\text{NO}_2$
  - d.  $\text{N}_2\text{O}_3$
57. Phage-virus secretes an enzyme "lysozyme" from its:
  - a. Tail region
  - b. head region
  - c. neck region
  - d. capsule region
58.  $[ML^{-1}T^{-1}]$  are the dimensions of:
  - a. Angular momentum
  - b. power
  - c. impulse
  - d. viscosity
59. Group 5<sup>th</sup> elements are arsenic and antimony are considered as:
  - a. Metallic
  - b. non metallic
  - c. metalloids
  - d. transition elements
60. Much of mechanical digestion takes place in the:
  - a. esophagus
  - b. mouth
  - c. stomach
  - d. duodenum
61. Styles \_\_\_\_\_ popular in the 1960s are reappearing in high fashion boutiques
  - a. What have been
  - b. which have been
  - c. that have been
  - d. that were
62. A two meter high tank is full of water. A hole is made in the middle of the tank. The speed of efflux is:
  - a.  $4.9 \text{ ms}^{-1}$
  - b.  $9.8 \text{ ms}^{-1}$
  - c.  $4.42 \text{ ms}^{-1}$
  - d.  $3.75 \text{ ms}^{-1}$
63. The bleaching action of bleaching powder is due to "available chlorine" it is the amount of chlorine.
  - a. That is required for the preparation of bleaching powder
  - b. Site free when excess of sulphuric acid is added to the bleaching powder
  - c. That is required for the generation of the hypochlorite.
  - d. Both B and C
64. HIV contains
  - a. Two R.N.As
  - b. a single R.N.A
  - c. D.N.A and R.N.A
  - d. D.N.A
65. The quantity which specified the displacement as well as the direction of motion in simple harmonic motion is:
  - a. Phase angle
  - b. angular frequency
  - c. path difference
  - d. none of these
66. The formula of mustard gas is:
  - a.  $(\text{C}_2\text{H}_5\text{Cl})_2\text{S}$
  - b.  $(\text{C}_2\text{H}_4\text{Cl})_2\text{S}$
  - c.  $(\text{C}_2\text{H}_3\text{Cl})_2\text{S}$
  - d.  $(\text{C}_2\text{H}_2\text{Cl})_2\text{S}$
67. The amount of energy in food is measured in:
  - a. ATP
  - b. Calories
  - c. ADP
  - d. Carbohydrates
68. The magnitude of the periodic force, which simple pendulum exerts on the suspension points, depends upon:
  - a. Length of the pendulum
  - b. Time period of vibration of pendulum
  - c. mass of the bob of pendulum
  - d. value of "g"

69. All gases below are monatomic except:  
 a. H b. He c. Ne d. Xe
70. The inherit form of immunity through mother's milk is the  
 a. Active immunity b. innate immunity  
 c. passive immunity d. acquired immunity
71. Waseem \_\_\_\_\_ this him as MD for many years, but he is rather unhappy with his salary:  
 a. Is working in b. is serving  
 c. is working for d. has been working
72. When the pressure in a medium increases, the speed of sound in that medium:  
 a. increases b. decreases  
 c. does not change d. sometimes increases and sometime decreases
73. choose the correct name of  $Ba_2XeO_4$   
 a. Barium Xenate b. Barium Xenthate  
 c. Barium Prexenate d. Barium Perxenthate
74. Which of the following is NOT an innate behavior?  
 a. A body mammal sucking milk b. a dog looking for its food dish  
 c. a worm moving away from bright light d. a spider spinning a web.
75. The number of loops in stationary wave depends upon  
 a. Velocity of wave's b. wavelength of waves  
 c. nature of the medium d. Frequency of waves
76. The electronic configuration of  $Cu_{(29)}$  is:  
 a.  $-3s^2 3p^6 3d^{10} 4s^1$  b.  $-3s^2 3p 3d^9 4s^2$   
 c.  $-3s^2 3p 3d^8 4s^2$  d.  $-3s^2 3p 3d^9 4s^2$
77. Entomoeba belongs to the phylum:  
 a. Sporozoa b. sarcodina c. mastigophora d. microspora
78. When the light enters from air to glass, it suffers a change in the:  
 a. Wavelength of light b. speed of light  
 c. frequency of light d. wavelength and speed of light
79. The highest oxidation state of Manganese  $-3s^2 3p 3d^5 4s^2$  its compounds is:  
 a. +2 b. +5 c. +7 d. +8
80. A non specific defense reaction to tissue damage caused by injury or infection is known as:  
 a. Active immunity b. The inflammatory response  
 c. c..... d. ....
81. Tahira as well as her brother \_\_\_\_\_ responsible for the loss and they must be made to makeup for it:  
 a. Is b. are c. were d. have been
82. When the light is moving from rare medium to denser medium on reflection it suffers a phase change of  
 a.  $180^\circ$  b.  $120^\circ$  c.  $90^\circ$  d.  $0^\circ$
83. The oxidation power of halogen depends upon:  
 a. Energy of dissociation b. electron affinity of atoms  
 c. hydration energies of ions d. all of the above
84. Nuclear mitosis occurs in the kingdom of:  
 a. Monera b. Protista c. Plantae d. Fungi

85. We can hear sound around the corner but cannot see because of:  
 a. Interference      b. diffraction      c. polarization      d. dispersion
86. All compounds are organic except:  
 a.  $(H,N), CO$       b.  $NH_4CNO$   
 c.  $CH_3NO_2$       d.  $C_2H_5N_2HSO_4$
87. The protein that helps other cells resist viral infection is  
 a. Penicillin      b. histamine      c. interferon      d. antigens
88. The powers of the objective and eye piece of telescope are 0.5 diopter and 10 diapoter respectively. The magnifying power of telescope is:  
 a. 0.5      b. 10      c. 20      d. 0.05
89. The oxidation number of cobalt in  $[Co(en)_2H_2O(CN)]^{2+}$   
 a. 2      b. 3      c. 4      d. 5
90. Rust and smut belong to the phylum  
 a. Zygomycota      b. ascomycota      c. basidiomycota      d. deuteromycota
91. She \_\_\_\_\_ her parents. They must be worried about her health.  
 a. Had better call      b. had better called  
 c. had better to call      d. better call
92. At constant temperature when the volume of the given mass of gas is doubled its density becomes:  
 a. Double      b. One fourth      c. Four times      d. Half
93. Ammonium hydroxide was added to a salt solution deep blue color was obtained. The solution contains ions of:  
 a.  $Zn^{+2}$       b.  $CU^{+2}$       c.  $Fe^{+3}$       d.  $Ba^{+2}$
94. A network of tubules that runs through compact bone is called the:  
 a. Haversian canal      b. periosteum      c. marrow      d. joint
95. The process which is performed quickly is:  
 a. Isobaric process      b. adlabalic process  
 c. isothermal process      d. isochoric process
96. The color of coordination compound bisdimethylglyoxime nickel (II) is:  
 a. red      b. blue      c. orange      d. black
97. Club-mosses are also called:  
 a. psilopsida      b. sphenopsida      c. lycopsida      d. pteropsida
98. for all irreversible process, the entropy of the system:  
 a. Decreases      b. remains constant      c. is zero      d. increases
99. Choose the compound tetra amine aqua chloro cobalt (III) chloride:  
 a.  $[Co(NH_3)_4(H_2O)(Cl_2^{-2})]Cl_3^{-}$       b.  $[^{+2}Co(NH_3)_4(H_2O)(Cl_2^{-2})]Cl_3^{-}$   
 c.  $[Co(NH_3)_4(H_2O)(Cl_2^{-2})]Cl_3^{-}$       d.  $[Co(NH_3)_4(H_2O)Cl]Cl_2$
100. Hormones produced from steroid are called  
 a. Protein hormones      b. Non steroid hormones  
 c. steroid hormones      d. Poptide hormones
101. He \_\_\_\_\_ before the interview board.  
 a. Was afraid to appear      b. was afraid of appearing  
 c. is afraid of appearing      d. feared appearance

102. The correct expression for the coulomb's force is:

a.  $\vec{F} = \frac{1}{4\pi\epsilon_0} \times \frac{q_1 q_2}{r^2} \vec{r}$

b.  $\vec{F} = \frac{1}{4\pi\epsilon_0} \times \frac{q_1 q_2}{r} \vec{r}$

c.  $\vec{F} = \frac{1}{4\pi\epsilon} \times \frac{q_1 q_2}{r^2} \vec{r}$

d.  $\vec{F} = \frac{1}{4\pi\epsilon} \times \frac{q_1 q_2}{r^2}$

103. The wave nature of an electron is illustrated by its:

- a. Photoelectric effect  
c. penetrating effect

- b. Compton effect  
d. diffraction

104. Lycopersicum esculentum is commonly known as:

- a. Gram                      b. tomato                      c. potato                      d. red pepper

105. The potential gradient between the two charged plates having separation of 0.5 cm and potential difference of 12 volts is:

- a. 240 NC<sup>-1</sup>                      b. 24 NC<sup>-1</sup>                      c. 2.4 NC<sup>-1</sup>                      d. 2400 NC<sup>-1</sup>

106. The conversion of carbonate to urea is:

- a. Slow and exothermic  
c. slow and endothermic
- b. fast and exothermic  
d. fast and endothermic

107. The rate of metabolism is regulated by:

- a. PTH                      b. thyroxine                      c. aldosterone                      d. calcitonin

108. Ohm × farad is equivalent to:

- a. Second                      b. weber                      c. henry                      d. tesla

109. Vehicular emission that is major environmental concern is:

- a. CO<sub>2</sub>                      b. SO<sub>2</sub>                      c. low hydrocarbons                      d. All of them

110. Plant cells synthesize sugar in the:

- a. Thylakoid                      b. grana                      c. stroma                      d. christa

111. He said, "If I were you, I would protest" can be indirectly reported as:

- a. If he had been me, he would have protested  
b. He advised us to protest  
d. If he had been I, he would have protested
- c. If he were me, he would protest

112. A wire of uniform cross section A, length l and resistance R is cut into two equal pieces. The resistivity of each piece will be:

- a. The same                      b. one fourth                      c. double                      d. one half

113. Tetraethyl lead, (C<sub>2</sub>H<sub>5</sub>)<sub>4</sub>Pb is used as antiknock agent and is abandoned because of its hazardous product during the combustion of fuel. The hazardous product is:

- a. CO<sub>2</sub>                      b. CO                      c. lead                      d. Free radical ethyl (C<sub>2</sub>H<sub>5</sub>)

114. Which sequence correctly describes the route sperm take through the human male reproductive system?

- a. Vas deference's, urethra, epididymis  
c. Epididymis, urethra, vas deferens
- b. Epididymis, vas deferens urethra  
d. Urethra, epididymis, vas deferens

115. Two metallic conductors have the same value of resistivity. These conductors can be differentiated from the values of their:

- a. Temperature coefficient                      b. resistances                      c. conductance's                      d. conductivity

116. Select the correct formula of 2-methyl pentane:

- a. C<sub>5</sub>H<sub>12</sub>                      b. C<sub>5</sub>H<sub>16</sub>                      c. C<sub>6</sub>H<sub>12</sub>                      d. C<sub>6</sub>H<sub>14</sub>

117. In chlorophyll "a" The group attached to propyrine ring is:

- a. Hydroxyl group  
c. carboxyl group
- b. methyl group  
d. aldehyde group

118. The total driving force of the battery to draw current through a circuit is called:  
 a. Voltage of battery  
 b. power of battery  
 c. e.m.f of battery  
 d. All of these
119. In reforming process open chain hydrocarbons are converted into:  
 a. Polymers  
 b. branched chain hydrocarbons  
 c. ring hydrocarbons  
 d. branched and ring hydrocarbon
120. The process of cell division result in:  
 a. Two daughter cells  
 b. sister chromatids  
 c. mitosis  
 d. unregulated growth
121. \_\_\_\_\_ in the world.  
 a. Our's is not one of the quickest response system  
 b. Our is not one of the quickest response systems  
 c. Ours is not one of the quickest response systems  
 d. Our is not one of the quickest response system.
122. Two metallic wires are lying parallel. If the current in these wires be flowing in the same direction, wires will:  
 a. Attract each other.  
 b. Repel each other  
 c. Have no force of attraction or repulsion  
 d. Remain stationary
123. An organic compound after fusion with sodium gives white precipitate when concentrated nitric acid and then silver nitrate solution was added to the filtrate. The compound is likely to be:  
 a.  $\text{CH}_3\text{CH}_2\text{CHO}$   
 b.  $\text{CH}_3\text{CH}_2\text{CH}_2\text{OH}$   
 c.  $\text{CH}_3\text{CH}_2\text{COOH}$   
 d.  $\text{CH}_3\text{CH}_2\text{CH}_2\text{Br}$
124. Chlorophyll is protected from intense light by:  
 a. Plant hormones  
 b. carotenoids  
 c. plant enzymes  
 d. water present in mesophyll tissue
125. The SI unit of magnetic flux is weber which is equal to:  
 a.  $\text{NmA}^{-1}$   
 b.  $\text{Nm}^2\text{A}^{-1}$   
 c.  $\text{NA}^{-1}$   
 d.  $\text{NmA}^{-2}$
126. Ethyne has a total of:  
 a. One  $\sigma$  bond, two  $\pi$  bonds  
 b. One  $\sigma$  bond, four  $\pi$  bonds  
 c. Two  $\sigma$  bond, four  $\pi$  bonds  
 d. Three  $\sigma$  bond, two  $\pi$  bonds
127. Malpighian tubules convert nitrogenous waste into:  
 a. Urine  
 b. ammonia  
 c. uric acid  
 d. urea
128. An electron and proton are projected with same velocity normal to magnetic field which one will suffer greater deflection?  
 a. proton  
 b. electron  
 c. both will suffer greater deflection  
 d. None of these
129. Chose the correct statement  
 a. Resonance hybrids are the weighted average of all the resonating forms  
 b. Resonance hybrids are the generally considered as unstable.  
 c. Resonance hybrids are the averagely of all the resonance forms.  
 d. Resonance hybrids are averaged of all the less stable resonating forms.
130. Chlorosis in plants is caused by the deficiency of:  
 a. Nitrogen  
 b. magnesium  
 c. potassium  
 d. both a and b
131. A good business man should not be unscrupulous while making profits the underlined word means:  
 a. Unprincipled  
 b. careless.  
 c. illegal  
 d. miserly
132. The motional e.m.f depends upon:  
 a. Strength of magnetic field  
 b. length of conductor  
 c. Speed of conductor  
 d. All of these

133. Carbon-carbon double bond as compared to single bond is:
- Less susceptible to oxidation
  - more susceptible to oxidation
  - equally susceptible to oxidation
  - All of these
134. The changes in the biochemical composition and physiology occurring at regular intervals in 24 hours is termed as:
- Gioannual rhythm
  - lunar rhythm
  - Circadian rhythm
  - tidal rhythm
135.  $\frac{\text{volt} \times \text{second}}{\text{ampere}}$  is equal to:
- Gauss
  - weber
  - henry
  - tesla
136. Which of the following is a Nucleophiles?
- $\text{AlCl}_3$
  - $\text{CN}^-$
  - $\text{H}_2\text{O}$
  - $\text{BF}_3$
137. Early fall of leaves and fruits in plants is caused by the deficiency of:
- Phosphorus
  - potassium
  - magnesium
  - nitrogen
138. The counter torque produced in the moving coil of generator is called:
- Restoring torque
  - deflection torque
  - back motor effect
  - All of these
139. Select the most stable carbonium ion:
- $^+\text{CH}_3$
  - $^+\text{CH}_2\text{CH}_3$
  - $(\text{CH}_3)_2\text{CH}^+$
  - $(\text{CH}_3)_3\text{C}^+$
140. The organisms developed with two heads and one trunk is called:
- Identical twins
  - Siamese twins
  - dizygotic twins
  - fraternal twins
141. Cynic and \_\_\_\_\_ are synonyms
- Skeptic
  - secret
  - solitary
  - truthful
142. The inductive reactance of coil having inductance of 0.5 Henry in which AC of 50Hz flows is:
- 94.2  $\Omega$
  - 1.57  $\Omega$
  - 157  $\Omega$
  - 9.42  $\Omega$
143. Water is said to be permanently hard when it contains:
- Carbonates of  $\text{Ca}^{2+}$  and  $\text{Mg}^{2+}$  ions
  - Bicarbonates of  $\text{Ca}^{2+}$  and  $\text{Mg}^{2+}$  ions
  - Sulphates of  $\text{Na}^+$  and  $\text{Mg}^{2+}$  ions
  - Chlorides of  $\text{Ca}^{2+}$  and  $\text{Mg}^{2+}$  ions
144. Hydathodes are
- Hormones secreting glands
  - water secreting glands
  - nectar secreting glands
  - enzymes secreting glands
145. In RLC series circuit when the frequency of AC source is very low, the circuit is a/an
- Resistive circuit
  - capacitive circuit
  - inductive circuit
  - resonant circuit
146. Which of the following makes the motion of a perpetual motion machine a physical impossibility
- First law of thermodynamics
  - second law of thermodynamics
  - Third law of thermodynamics
  - None of these
147. A Punnet square is used to determine the:
- Result of mitosis
  - result of meiosis
  - actual outcome of a cross
  - probable outcome of cross



148. The process of combining low frequency signal with high frequency carries waves is called:
- Rectification
  - amplification
  - modulation
  - magnification
149. A buffer solution containing  $\text{H}_2\text{CO}_3$  and  $\text{NaHCO}_3$  is to be prepared to maintain a pH of 7.00 what must be the ratio  $\frac{\text{NaHCO}_3}{\text{H}_2\text{CO}_3}$  in order to realize such pH if  $K_a$  of carbonic acid is  $4.3 \times 10^{-7}$ ?
- 43
  - 48
  - 0.43
  - 4.3
150. The number of chromosomes of tobacco plant are:
- 42
  - 29
  - 43
  - 48
151. "Professional" and "\_\_\_\_\_ " are antonyms.
- Unemployed
  - entrepreneur
  - amateur
  - capitalist
152. The ratio of volumetric strain to volumetric stress is called:
- Compressibility
  - young's modulus
  - bulk's modulus
  - shear's modulus
153. A sample containing aluminum weighting 10.0g yielded 2.0g of aluminum sulphide. What is the percentage of aluminum (atomic mass = 27.0) in sample? Sulphur (atomic mass = 32.0)
- $\frac{2.0 \times 100}{10.0}$
  - $\frac{2.0}{10} \times \frac{2 \times 27}{150} \times 100$
  - $\frac{2.0}{10.0} \times \frac{27}{1500} \times 100$
  - $\frac{2.0}{10.0} \times \frac{150}{3 \times 27} \times 100$
154. During replication which sequence of nucleotides would bond with the DNA sequence TATGA?
- AUAGA
  - ATACA
  - UAUGA
  - ATACT
155. The substance which undergoes plastic deformation until it breaks is:
- Ductile substance
  - brittle substance
  - plastic substance
  - all of these
156. Choose the region of the spectrum which would be used to determine the structure of crystalline solids:
- Visible
  - infrared
  - X-rays
  - ultraviolet
157. All of the following are growth hormones except:
- Phytohormones
  - Gibberlin
  - auxins
  - cytokinins
158. The temperature at which the domains of the ferromagnetic substances disorient is:
- Critical temperature
  - absolute temperature
  - curie temperature
  - normal temperature
159. Which one of the following most closely resembles an ideal gas?
- Xe
  - $\text{H}_2$
  - $\text{CO}_2$
  - He
160. A cross between dissimilar individuals to bring together their best characteristics is called
- Genetic engineering
  - hybridization
  - inbreeding
  - sequencing
161. Secrets leak when the \_\_\_\_\_ are many.
- Enemies
  - ill-wishes
  - confidants
  - detractors
162. The process by which the potential barrier of the depletion region can be increased or decreased is called:
- Amplification
  - biasing
  - modulation
  - doping
163. According to molecular orbital theory, which of the following is most unstable molecule?
- $\text{He}_2^+$
  - $\text{H}_2^-$
  - $\text{H}_2^+$
  - $\text{He}_2^2$
164. In grapes and mangoes, the inflorescence is:
- Panicle
  - multiparous cyme
  - capitulum
  - umbel

165. The color of light emitted by light emitting diode depends upon:  
 a. Forward voltage b. reverse current  
 c. forward current d. type of semiconductor
166. How many grams of water are produced in burning  $2.24 \text{ dm}^3$  of hydrogen of STP?  
 a. 180g b. 81g c. 1.8g d. 0.18g
167. Organism that contain genes from other organism are called:  
 a. Mutagenic b. transgenic c. clones d. sequencing
168. The combination of AND and NOT gate is called:  
 a. NAND gate b. NOR gate c. Or gate d. XOR gate
169.  $50 \text{ cm}^3$  of KOH solution was titrated against  $1.0 \text{ M}$  HCl using phenolphthalein as an indicator. The acid used was found to be  $7.5 \text{ cm}^3$ . The concentration of KOH solution is:  
 a.  $0.15 \text{ M}$  b.  $1.5 \text{ M}$  c.  $0.75 \text{ M}$  d. None
170. Ozone layer is present in the:  
 a. troposphere b. stratosphere c. mesosphere d. atmosphere
171. The guard looked at me \_\_\_\_\_ and then asked me to identify myself:  
 a. Dangerously b. hurriedly c. suspiciously d. nervously
172. If the temperature of the black body becomes double the intensity of radiation from it will become:  
 a. Double b. four times c. Six times d. sixteen times
173. Choose the least inert gas:  
 a. Helium b. Neon c. argon d. Xenon
174. An inherited characteristic that increases an organism ability to survive and reproduce in its specific environmental is called:  
 a. Radiation b. adaptation c. vestigial organ d. speciation
175. The scattering angle for which the Compton shift in wavelength is equal to zero:  
 a.  $\theta = 90^\circ$  b.  $\theta = 0^\circ$  c.  $\theta = 45^\circ$  d.  $\theta = 180^\circ$
176. Uranium - 238 decays to thorium - 234 by the process of:  
 a. Fission b. beta decay c. alpha radiation d. gamma radiation
177. C.F.C gases are produced from:  
 a. Burning of coal b. burning of charcoal  
 c. automobiles engines d. refrigeration and air conditions
178. The uncertainty in energy of photon which is emitted from an atom radiating for  $10^{-8}$  second is:  
 a.  $4 \times 10^{-7} \text{ Joule}$  b.  $4 \times 10^{-7} \text{ eV}$  c.  $6.6 \times 10^{-20} \text{ eV}$  d.  $4 \times 10 \text{ joule}$
179. The hydrolysis of an ester proceeds most slowly under the condition of:  
 a. High acidity b. high basicity c. neutrality d. high temperature
180. A woman is homozygous for A - negative blood type. A man has AB - negative blood type. What is the probability that the couple's child will be type B - negative?  
 a. 0% b. 25% c. 50% d. 75%
181. She tried to \_\_\_\_\_ my question, but I persisted in having an answer.  
 a. Refrain b. evade c. refuse d. deny
182. If an atom exists in the excited state  $n = 5$ , the maximum number of transition takes place is:  
 a. 6 b. 5 c. 10 d. 3
183. Which one of the following is strongest acid?  
 a.  $\text{FCH}_2\text{COOH}$  b.  $\text{CH}_3\text{COOH}$  c.  $\text{ClCH}_2\text{COOH}$  d.  $\text{C}_6\text{H}_5\text{CH}_2\text{COOH}$

184. The area where ultraviolet radiation are intense is the  
 a. Alpine forest      b. boreal forests      c. arctic tundra      d. alpine tundra
185. When the voltage of the target in the X-ray tube increases then the  
 a. Penetrating power of x-ray increases      b. intensity of x-ray increases  
 c. wavelength of x-ray increases      d. All of these
186. The frequency of light having wavelength  $3 \times 10^{-3}$  cm is  
 a.  $1 \times 10^6$       b.  $3.0 \times 10^7$       c.  $1 \times 10^{10}$       d.  $1 \times 10^{13}$
187. A bird's wings are homologous to:  
 a. Fishes tail fin      b. dog's front legs  
 c. mosquito's wings      d. Alligator's claws
188. The situation in which then excited state i.e. metastable state contains more number of electrons than the ground is called:  
 a. Ionized State      b. stimulations  
 c. population inversion      d. all of these
189. Which one of the following would you suggest to locate the position of the double bond between carbon atoms in an organic compound?  
 a. Addition of bromine water      b. Addition of HI  
 c. Oxidation with ozone      d. All of the above
190. Diameter of histone is:  
 a. 1 nm      b. 2 nm      c. 3 nm      d. 4 nm
191. Her \_\_\_\_\_ lasted for one month. They were the longest wedding celebrations in that area.  
 a. rituals      b. matrimonial      c. nuptials      d. rites
192. when a radioactive atom decays and its mass number decreases by 4 and charge number decreases by 2 the atom will emit:  
 a.  $\alpha$  radiation      b.  $\beta$  radiation      c.  $\gamma$  radiation      d. x-radiation
193. Most of the oxides of non-metals combine with water to form:  
 a. Hydrogen gas      b. Salt and water      c. a base      d. An acid
194. All of the following are derived from mesoderm except:  
 a. Muscles      b. liver      c. gonads      d. Blood vessels
195. One disintegration per second is equal to:  
 a. One curie      b. one Becquerel      c. one half life      d. All of these
196. What is the most important source of water pollution in Pakistan?  
 a. Industries      b. transportation  
 c. mining industry      d. Agricultural and municipal wastage
197. The number of nitrogenous base common in both D.N.A and R.N.A are  
 a. two      b. three      c. five      d. four
198. Fission reaction can be produced in  ${}_{92}\text{U}^{238}$  by:  
 a. fast neutrons      b. slow neutrons  
 c. thermal neutrons      d. all of these
199. In which of the following atoms, the 1S orbital is the smallest in size?  
 a. bromine      b. chlorine      c. fluorine      d. iodine
200. The genetic potential for one type of cell from a multicellular organism to generate a whole new organism is called:  
 a. Unipotent      b. multipotent      c. totipotent      d. pluripotent

MEDICAL ENTRANCE TEST 2012

- The sum of mole fractions of solute and solvent is always equal to:
  - 0.1
  - 10.0
  - 1.0
  - Zero
- Two forces of magnitude 20N and 10N act at a point then which one of following cannot be their possible sum?
  - 30 N
  - 10 N
  - 35 N
  - 15 N
- Glycolysis completes with the net gain of:
  - 2 ATP
  - 3 ATP
  - 4 ATP
  - 32 ATP
- An azeotropic mixture of two miscible liquids boils at lower temperature than its components when:
  - The system shows negative deviation from Raoult's law.
  - The system shows positive deviation from Raoult's law
  - The system perfectly obeys Raoult's law
  - Both A and B
- When force is applied to a body, several effects are possible. Which one of the following effects could not occur?
  - The body speed up
  - The body rotates
  - The body changes direction
  - Mass of body decreases
- When you go to Karachi, please
  - Collect a good watch for me
  - Acquire a good watch for me
  - Bring a good watch for me
  - Arrange a good watch for me
- Restriction enzymes are of great use in genetic engineering because:
  - The cut DNA at a specific base level
  - They cut D.N.A at several specific levels.
  - They help in binding the pieces of D.N.A
  - They are nuclease
- Optical fibers guides:
  - Current
  - Light
  - Sound
  - Voltage
- Methanoic acid  $\text{HCOOH}$  has one carbon oxygen bond of length 123 PH and another of 136 PM. The  $\text{C}=\text{O}$  and  $\text{C}-\text{O}$  bond lengths respectively would be:
  - 136 PM, 123 PM
  - 123 PM and 136 PM
  - 136 Pm and 136 PM
  - 123 PM and 123 PM
- Abscissic acid (ABA) Promotes:
  - Triple response
  - Sex expression
  - Flower imitation
  - Leaf, flower and fruit fall
- Choose the compound in which hydrogen bonding is not possible:
  - $\text{CH}_3\text{OCH}_3$
  - $\text{H}_2\text{O}$
  - $\text{CH}_3\text{CH}_2\text{OH}$
  - $\text{CH}_3\text{COOH}$
- The ratio of output voltage  $V_o$  to the voltage difference  $V_{in}$  between the positive (+) input and negative (-) input of opamp is (where  $V_{in} = V_+ - V_-$ )
  - Current gain
  - Voltage gain
  - Open loop gain
  - Close loop gain
- Why have you broken this jug? Passive form of the sentence is:
  - Why has this jug been broken by you?
  - Why have this jug been broken by you?
  - Why this jug has been broken by you?
  - Why had that jug been broken by you?
- Surplus amino acid in the body are broken down to form urea in:
  - Spleen
  - Kidneys
  - Liver
  - Pancreas
- Lipids are chemically:
  - Acids
  - Alcohols
  - Ethers
  - Esters
- The resistance of light dependant resistance LDR:
  - Increases with light
  - Decreases with light
  - Decreases with darkness
  - None of the above

17. "Remember to brush your teeth after dinner," she said. Indirect form of the sentence is:  
 a. She told him to remember to brush his teeth after dinner.  
 b. She reminded him brush his teeth after dinner.  
 c. She advised him to remember to brush his teeth after dinner.  
 d. She said to him to remember to brush his teeth after dinner.
18. Which of the following represent the bile salts?  
 a. Bilirubin                      b. Biliverdin                      c. Haemoglobin                      d. Both A & B
19. Benzene undergoes substitution reactions more easily than addition reactions because:  
 a. Of its cyclic nature                      b. of having three double bonds  
 c. of aromatic character                      d. of delocalization of electrons
20. The maximum kinetic energy of an electron ejected from a metal by photon depends on:  
 a. The photon's frequency only                      b. the metal work function  
 c. The intensity of incident light                      d. None of the above
21. A spring system executes simple harmonic motion. If a load is added to it then the time period of spring mass system will be:  
 a. Increased                      b. decreased                      c. the same                      d. halved.
22. Conversion of excess glucose into fat is known as:  
 a. Glycolysis                      b. Lipogenesis                      c. Ketogenesis                      d. Glycogenesis
23. Ring test is shown by compounds having  
 a. Sulphate radical                      b. chloride radical  
 c. Nitrate radical                      d. None of the above
24. The diode that converts electrical energy into light energy is called:  
 a. Solar cell                      b. photodiode                      c. vacuum diode                      d. light emitting diode
25. Choose the correct sentence out of the following:  
 a. The country was hard hit by the war.                      b. The country was hardly hit by the war.  
 c. The country was severely hit by the war.                      d. The country was more hardly hit by the war
26. ~~Fatigue free~~ muscles are:  
 a. Striped                      b. unstriped                      c. cardiac                      d. friceps
27. Excretion of bile pigments in blood indicates:  
 a. Anaemia                      b. diabetes                      c. Rickets                      d. Jaundice
28. Which arrangement of the Photon is in their decreasing energy?  
 a. X rays > i.r. > u.v. > visible                      b. x rays > u.v. > visible > i.r.  
 c. u.v. > x rays > visible > i.r.                      d. i.r. > visible > x rays > u.v.
29. The colours in the soap bubble are due to:  
 a. Interference                      b. Dispersion of light                      c. Scattering of light                      d. Refraction of light
30. You did not kill a lion in the forest. Passive form of the sentence as:  
 a. A lion is not killed by you in the forest                      b. A lion was not killed by you in the forest.  
 c. A lion is killed not by you in the forest.                      d. A lion has not killed by you in the forest.
31. An individual with contrasting alleles is called:  
 a. Homozygous                      b. Monoecious                      c. Hterozygous                      d. Dioecious
32. Which is the strongest acid?  
 a.  $\text{CH}_3\text{COOH}$                       b.  $\text{Cl}_2\text{CH COOH}$                       c.  $\text{Cl CH}_2\text{COOH}$                       d.  $\text{Cl}_3\text{C COOH}$
33. An object is a satellite orbiting around the earth is weightless because:  
 a.  $g=0$                       b. No force acts on it  
 c. Its motion is free fall                      d. it is far away from earth
34. The expression for binding energy is:  
 a.  $EB = fh$                       b.  $EB = [(ZM_p + N M_n) - z M^A] C^2$   
 c.  $EB = ZM_p C^2 + N M_n z M^A C^2$                       d.  $EB = ZM_p + N M_n - M C^2$



35. Mathematics . . . . . Difficult but is fascinating.  
a. Seems b. is seeming c. seemed d. seem
36. The colour of bone marrow is:  
a. Red b. Yellow c. Orange d. Both A & B
37. Enzymes are basically:  
a. Proteins b. Carbohydrates  
c. Hydrocarbons d. None of the above
38. Half life of given sample is 44 years. The sample will reduce to 50% of the original value after:  
a. 22 years b. 88 years c. 11 years d. None of above
39. Please come to the point; don't beat \_\_\_\_\_ the bush.  
a. Across b. about c. along d. around
40. Ozone is:  
a. Greenish, tasteless, light gas b. Blue green and bitter in taste  
c. Blue, poisonous and explosive gas d. Purple yellow, poisonous and non explosive gas
41. Rectified spirit is:  
a. 100% Ethanol b. 95% Ethanol c. 90% Ethanol d. 35% Ethanol
42. The time rate of change of magnetic flux has the same dimensions as that of:  
a. Current b. Resistance  
c. Magnetic induction d. Potential difference
43. A non connection tissue is:  
a. Areolar tissue b. Tendon c. Neuron d. Ligament
44. Lucas test is used to detect the presence of:  
a. Alcohols b. Phenols c. Amino acids d. Carboxylic acids
45. The transverse nature of light is verified with the phenomenon of:  
a. Interference b. Polarization c. Diffraction d. Dispersion
46. She has complained \_\_\_\_\_ me to the Principal.  
a. About b. from c. against d. over
47. Speech and language area are located in:  
a. Thalamus b. Medulla oblongata  
c. right cerebral hemisphere d. left cerebral hemisphere
48. Choose the correct statement:  
a. The aliphatic polyamides are generally known as Nylons  
b. The aliphatic polyamides are generally known's as polyester  
c. The aliphatic polyamides are generally known as Epoxy resins d. None of the above
49.  $\text{Na}_2\text{B}_4\text{O}_7 \cdot 10\text{H}_2\text{O}$  is the formula of:  
a. Bauxite b. Borax c. Carborundum d. Colemanite
50. I said to him, "can you read this letter?" Indirect form of the sentence is:  
a. I said to him whether he read that letter. b. I asked him if could he read this letter.  
c. I told him that he would read that letter. d. I asked him if he could read that letter.
51. Phytochromes are involved in:  
a. Photorespiration b. Photophosphorylation  
c. Photoperiodism d. Phototropism
52. 1 amu is equal to  $1.661 \times 10^{-24}$  g, then 4.0 g will be equal to:  
a.  $6.022 \times 10^{23}$  amu b.  $6.022 \times 10^{-23}$  amu  
c.  $6.022 \times 10^{-24}$  amu d.  $6.022 \times 10^{24}$  amu

53. If a soap bubble is charged:  
 a. Its size decreases  
 b. Its size increases  
 c. No change  
 d. None of them
54. How many genotype will be produced by crossing of two alleles "A" and "a"?  
 a. One  
 b. Two  
 c. Three  
 d. Four
55. An electric current of 1 A is passing through a cross section of the coil in 1 second. How many electrons are involved in providing a current of 1A? The charge on 1 electron is  $1.602 \times 10^{-19}$  C.  
 a.  $3.21 \times 10^{18}$   
 b.  $2.2 \times 10^{16}$   
 c.  $1.602 \times 10^{19}$   
 d.  $6.42 \times 10^{18}$
56. A botanist who proposed the cell-theory was:  
 a. Schleiden  
 b. Schwann  
 c. Robert Hooke  
 d. Robert Brown
57. For a certain chemical reaction the slope of the plot was determined and plotted against the concentration  $a - x)^2$  and a straight line was obtained. It indicates that the reaction is of:  
 a. First order  
 b. Second order  
 c. Third order  
 d. Zero Order
58. One mole is the amount of substance which contains as many elementary entities as contained in:  
 a. 0.12 kg of  ${}_6C^{12}$   
 b. 1.2 kg of  ${}_6C^{12}$   
 c. 0.012 kg of  ${}_6C^{12}$   
 d. 0.12 kg of  ${}_8C^{16}$
59. Smooth endoplasmic reticulum makes:  
 a. Enzymes  
 b. Protein  
 c. Sugar  
 d. Lipids
60. Select the chemical method used for the determination of reaction rate:  
 a. Conductometry  
 b. Polarimetry  
 c. pH metry  
 d. Volumetric analysis
61. The uncertainty recorded in the radius of a sphere is 1.6%. the uncertainty in the area of that sphere is:  
 a. 4.8%  
 b. 3.2%  
 c. 1.6%  
 d. 0.8%
62. How many atoms of oxygen in R.N.A are greater than D.N.A ?  
 a. One  
 b. Two  
 c. Three  
 d. Four
63. Bakelite is obtained from:  
 a. Adipic acid and hexamethylenediamine  
 b. Dimethyl terephthalate and ethyl glycol  
 c. Neoprene  
 d. Phenol and formaldehyde
64. Consider the following endothermic reaction:  $N_{2(g)} + O_{2(g)} \rightleftharpoons 2NO_{(g)}$  what will happen to the equilibrium if the temperature of the system is raised?  
 a. The equilibrium will shift in the backward  
 b. The equilibrium position will suffer no change  
 c. The equilibrium will shift in the forward direction.  
 d. All of the above
65. A hunter aiming a bird in a tree should aim:  
 a. A little above the bird  
 b. A little below the bird  
 c. Exactly at the bird  
 d. Very high
66. Abacterium that converts  $NO_2$  to  $NO_3$  is:  
 a. Rhizobium  
 b. Bacillus  
 c. Nitrosomonas  
 d. Nitrobacter
67. Why it is so those if aromatic compounds burned in air, produce a very smoky flame?  
 a. Aromatic compound cannot be completely converted into  $CO_2$  and other product during burning  
 b. The available amount of oxygen present in air is not sufficient to completely burn available compound.  
 c. Aromatic compound produces compounds on burning that are of black colour.  
 d. None of above.
68. Acetic acid reacts with methanol in the presence of an acid catalyst to give:  
 a. Methyl formate  
 b. Ethy formate  
 c. Methyl acetate  
 d. Ethyl acetate
69. An ideal transformer steps up or steps down:  
 a. Energy  
 b. AC voltage  
 c. DC voltage  
 d. Power
70. Growth promoting substance in plant is:  
 a. F.A.D  
 b. Chlorophyll a  
 c. I.A.A  
 d. ABA
71. Select the strongest reducing agent:  
 a.  $Cl^{-1}$   
 b. Ne  
 c.  $Na^{+}$   
 d.  $Ca^{+2}$

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91. You need to go to the hospital \_\_\_\_\_ possible. An erratic heart-beat can be very dangerous:  
a. As good as      b. as long as      c. as much as      d. as soon as
92. Largest lymphatic duct is the:  
a. Abdominal duct      b. Thoracic duct      c. Femoral duct      d. Subclavian duct
93. The  $\sigma$  bond formed between carbon and oxygen atoms in aldehyde and ketene is due to the overlap of:  
a.  $sp^2 - sp$       b.  $sp^2 - sp^2$       c.  $sp^3 - sp^2$       d.  $sp - sp$
94. Two equal, anti parallel and non concurrent forces that produce only angular acceleration are:  
a. Couple      b. couple arm      c. Collinear forces      d. Torque
95. Redox action takes place during the process of:  
a. Respiration      b. Photosynthesis      c. Growth      d. Both A & B
96. Paper is biodegradable material. It produces gas whose emission is environmentally objectionable. Which is that?  
a.  $CO_2$       b.  $SO_2$       c.  $CH_4$       d.  $NO_2$
97. The minimum number of forces that keep the body in equilibrium are:  
a. Two      b. Three      c. Four      d. Five
98. A ball of mass 5 kg is dropped from a height of 78.4m. the time taken by the ball to hit the ground is:  
a. 2s      b. 4s      c. 8s      d. 16 s
99. How many sigma bonds are there in:  $CH_2 = CH - CH = CH_2$ :  
a. 6      b. 9      c. 11      d. 4
100. In electromagnetic waves the electric and magnetic vectors are:  
a. Parallel      b. Anti parallel  
c. Perpendicular      d. None of the above
101. The negative gradient of electric potential is also called:  
a. Potential energy      b. Electric field intensity  
c. electric potential      d. Electro volt
102. In human being, the number of cranial nerves are:  
a. 8 pairs      b. 10 pairs      c. 12 pairs      d. 31 pairs
103. Ethene and Ethyne can be distinguished by employing the test:  
a.  $Br_2$  in organic solvent      b. Baeyer's reagent  
c. Phenyl Hydrazine      d. Tollen's reagent
104. The ionization potential of Hydrogen atom is:  
a. 13.6 V      b. 1.36 V      c. 10.2 V      d. 4.3 V
105. Live attenuated vaccines are used to treat all of the following diseases except:  
a. Typhoid and Plague      b. Polio and measles  
c. Cholera and rabies      d. Mumps and influenza
106. Cracking problem of fuel combustion can be avoided by:  
a. Reforming      b. Improving octane number  
c. adding TEL      d. All of the above
107. The shortest wavelength of radiation in Paschen series is:  
a.  $R_H/9$       b.  $9/R_H$       c.  $9 R_H$       d.  $9 + R_H$
108. All of the following are polysaccharides except:  
a. Lactose      b. Cellulose      c. Starch      d. glucose
109. Select the compound that will give positive Iodoform test:  
a. Benzaldehyde      b. 2 - Pentanone      c. 3 - Hexanone      d. 3 - Pentanone
110. The part of electromagnetic spectrum in which Lyman series lies is:  
a. Visible region      b. Infrared region      c. Ultra violet region      d. x - rays
111. A single ovum of human being contains:  
a. X - Chromosomes      b. XX - Chromosomes      c. YY - Chromosomes      d. XY - Chromosomes

112. Choose the correct statement:
- Ionic solids exist in the form of molecules
  - Ionic solids have high volatility
  - Ionic solids exist in the form of liquids
  - Ionic solids have high melting points and boiling points.
113. Centripetal force acting on a body rotating in circle of radius 'r' is "F". If the body moves in a circle of radius half of the initial value keeping other quantities constant, then the percentage changes in the centripetal force is:
- 300%
  - 100%
  - 400%
  - 200%
114. In a dihybrid cross, how many homozygous off springs can be produced?
- 4
  - 3
  - 2
  - 9
115. Which is the true about London forces?
- London forces are present in non-polar molecules
  - London forces are present in polar molecules
  - London forces are created between instantaneous dipole and induced dipole
  - All of the above.
116. Which one of the following properties of electromagnetic waves do not change in vacuum?
- Speed
  - Wavelength
  - Frequency
  - All of above
117. In human being, the carrier of colour blind is:
- Male
  - Female
  - Both male and female
  - None of them
118. The correct electronic configuration of Nickel (28) is:
- $1s^2 2s^2 2p^6 3s^2 3p^6 3d^8 4s^2$
  - $1s^2 2s^2 2p^6 3s^2 3p^6 3d^7 4s^2 4p^1$
  - $1s^2 2s^2 2p^6 3s^2 3p^6 3d^6 4s^2 4p^2$
  - $1s^2 2s^2 2p^6 3s^2 3p^6 3d^8 4s^1 4p^3$
119. Hook's law correlates that:
- Force and displacement
  - Force and extension
  - Force and compression
  - Stress and strain
120. Ghani Khan is \_\_\_\_\_ of Pashto.
- John Keats
  - a John Keats
  - the John Keats
  - Like John Keats
121. The number of ATP formed directly by a single krebs cycle is:
- One ATP
  - Two ATP
  - 32 ATP
  - 36 ATP
122. Select the correct equilibrium constant expression, Kc for the following reversible reaction.  $Ce^{4+}_{(aq)} + Fe^{3+}_{(aq)} \rightleftharpoons Ce^{3+}_{(aq)} + Fe^{2+}_{(aq)}$
- $\frac{[Ce^{3+}_{(aq)}][Fe^{3+}_{(aq)}]^2}{[Ce^{4+}_{(aq)}][Fe^{2+}_{(aq)}]}$
  - $\frac{[Ce^{3+}_{(aq)}][Fe^{2+}_{(aq)}]}{[Ce^{4+}_{(aq)}][Fe^{2+}_{(aq)}]}$
  - $\frac{[Ce^{3+}_{(aq)}]^2[Fe^{3+}_{(aq)}]}{[Ce^{4+}_{(aq)}][Fe^{2+}_{(aq)}]}$
  - $\frac{[Ce^{3+}_{(aq)}][Fe^{2+}_{(aq)}]}{[Ce^{4+}_{(aq)}]^2[Fe^{2+}_{(aq)}]}$
123. MRI works on the principle of:
- Beats
  - Interference
  - Resonance
  - Standing waves
124. Myoglobin combines with:
- Four oxygen molecules
  - Three oxygen molecules
  - Two oxygen molecules
  - one oxygen molecule
125. Sunken stomata are present in:
- Hydrophytes
  - Xerophytes
  - Mesophytes
  - All of the above
126. Bohr predicted the radius of the orbit of the electron in hydrogen atom to be:  $r = \frac{n^2 \epsilon_0 h^2}{e^2 \pi m}$  If electron moves from  $n = 1$  to  $n = 2$ , by how much time the radius of the orbit will increase?
- 2 times
  - 3 times
  - 4 times
  - 5 times
127. The waveform of sinusoidal voltage its frequency and phase can be found by:
- CRO
  - Diode
  - Transistor
  - Radio



128. Which blood group transfusion can be made without risk?
- Group A to Group B
  - Group AB to group O
  - Group A to Group O
  - Group B to group AB
129. The first law of thermodynamics has a statement which implies that:
- No heat enters or leaves the system
  - The temperature remains constant
  - All work is mechanical
  - Energy is conserved
130. Hemophilia affects males more than females because of:
- Dominant autosomes
  - Dominant X - Linked
  - Recessive X - linked
  - y - chromosome linked
131. The volume occupied by 3.2 g of oxygen at STP is:
- 22.4 dm<sup>3</sup>
  - 2.24 dm<sup>3</sup>
  - 11.2 dm<sup>3</sup>
  - 16.0 dm<sup>3</sup>
132. When a neutral body is rubbed and it becomes positively charged, it must have:
- Lost electrons
  - Lost protons
  - Gained protons
  - Gained electrons
133. Penicillin is obtained from:
- Algae
  - Yeast
  - Mushroom
  - Mold
134. Which of the following elements with a given electronic configuration has highest ionization potential value?
- 1s<sup>2</sup> 2s<sup>2</sup> 2p<sup>3</sup>
  - 1s<sup>2</sup> 2s<sup>2</sup> 2p<sup>4</sup>
  - 1s<sup>2</sup> 2s<sup>2</sup> 2p<sup>6</sup> 3s<sup>1</sup>
  - 1s<sup>2</sup> 2s<sup>2</sup> 2p<sup>6</sup> 3s<sup>2</sup> 3p<sup>3</sup>
135. When a charged particle enters a uniform magnetic field, there is a change in:
- Kinetic energy
  - Magnitude of velocity
  - Direction of velocity
  - All of these
136. Insulin is produced by:
- Alpha - cells
  - Beta - cells
  - Delta - cells
  - Gamma-cells
137. Which one is not responsible for the formation of acid rain?
- CO<sub>2</sub>
  - SO<sub>2</sub>
  - CO
  - NO<sub>2</sub>
138. Which of the following hybridization can explain the shape of BeCl<sub>2</sub>?
- sp<sup>3</sup> hybridization
  - sp hybridization
  - sp<sup>2</sup> hybridization
  - sp<sup>2</sup> hybridization
139. According to Millikan's oil drop experiment the charge on an oil droplet is:
- Quantized
  - integral multiple of "e"
  - Not less than "e"
  - All of them
140. Did he buy a car yesterday? Passive form of the sentence is:
- Was a car bought by him yesterday
  - Has a car been bought by him yesterday?
  - Is a car bought by him the other day?
  - Had a car been bought by him yesterday?
141. The enthalpy of the elements at 1 atm: pressure and 298 K is arbitrary given the value of
- 0.1
  - 1.0
  - 29.8
  - Zero
142. If two forces P and Q are such that  $IP + QI = IP - QI$  then the angle between P and Q is:
- 0°
  - 30°
  - 90°
  - 180°
143. Chlorophyll a and b chiefly absorb:
- Violet blue light
  - Orange light
  - Blue - red light
  - Red, orange light
144. Select the correct statement about lattice energy:
- Energy absorbed when 1 mole of ionic crystal Lattice is formed from its constituent ions in the gaseous state.
  - The energy Liberated when 1 mole of an ionic crystal Lattice is formed from its constituent ions in the gaseous state
  - Energy liberated when 1 mole of an ionic crystal Lattice is splitted into its constituent ions in the gaseous state.
  - None of the above

145. Two blocks of masses 1.0 kg and 3.0 kg placed in contact are acted upon by a force of 40 N. the acceleration of 1.0 kg mass will be:  
 a.  $40 \text{ m s}^{-2}$  b.  $10 \text{ m s}^{-2}$  c.  $30 \text{ m s}^{-2}$  d.  $50 \text{ m s}^{-2}$
146. Choose the correct sentence out of the following:  
 a. Each of them deserves praise. b. Each one of them deserves praise  
 c. Each one of them deserve praise d. Every one of them deserves praise.
147. Following nasal passages are composed of cartilage except:  
 a. Trachea b. Bronchus c. Bronchioles d. Tracheoles
148. A set of xylem tissues are:  
 a. Vessels, tracheids, parenchyma b. Sieve tubes, companion cell, fibers  
 c. Parenchyma, sieve tube, vessels d. Fibers, companion cells, tracheids
149. Which of the following compounds on treatment with  $\text{NaHCO}_3$  will liberate  $\text{CO}_2$ ?  
 a.  $\text{CH}_3\text{COOH}$  b.  $\text{C}_2\text{H}_5\text{NH}_2$  c.  $\text{CH}_3\text{COCH}_3$  d.  $\text{CH}_3\text{CH}_2\text{OH}$
150. A body in equilibrium must not have:  
 a. Kinetic energy b. Velocity c. Momentum d. Acceleration
151. Choose the correct sentence out of the following:  
 a. The meeting does not approve in your scheme. b. The meeting do not approves of your scheme.  
 c. The meeting does not approve of your scheme. d. The meeting does not approve about your scheme.
152. The interval of pace maker signals from S.A.N to A.V.N is:  
 a. 01 second b. 0.1 second c. 02 second d. 0.2 second
153. Commonly used coagulant used for the purification of water is:  
 a.  $\text{Ca}(\text{NO}_3)_2$  b.  $\text{MgCl}_2$  c.  $\text{Al}_2(\text{SO}_4)_3$  d.  $\text{Ca}(\text{OH})_2$
154. Forces controlling the reactions are proportional to the product of the active masses (concentration) of chemicals. The above statement is of:  
 a. Raoult's law b. Le Chatelier's principle  
 c. The law of conservation of energy d. The law of mass action
155. Sound waves cannot be:  
 a. Polarized b. Reflected c. Refracted d. Diffracted
156. He said to me, "May you succeed in life!"  
 a. He said to me that may you succeed in life  
 c. He prayed that he might succeed in life.  
 Indirect form of the sentence is:  
 b. He prayed that I might succeed in life.  
 d. He prayed that you may succeed in life.
157. A test cross is:  
 a.  $\text{Tt} \times \text{Tt}$  b.  $\text{Tt} \times \text{tt}$  c.  $\text{TT} \times \text{Tt}$  d.  $\text{TT} \times \text{TT}$
158. Which compound is formed when Ammonium hydroxide is added to silver chloride?  
 a.  $[\text{Ag}(\text{NH}_3)_2]\text{Cl}$  b.  $[\text{Ag}(\text{NH}_3)]\text{Cl}$  c.  $[\text{Ag}(\text{NH}_3)_4]\text{Cl}$  d.  $[\text{Ag}(\text{NH}_3)_6]\text{Cl}$
159. Spring constant of a spring is k. if the spring is cut into two halves then the spring constant of one of half is:  
 a.  $k+2$  b.  $k/2$  c.  $2k$  d.  $k$
160. Carotenoid contains:  
 a. Carotenes b. Xanthophylls c. Chlorophyll - C d. Both A & B
161. Which one is spontaneous chemical reaction?  
 a.  $\text{Zn} + \text{Cu}^{+2} \rightarrow \text{Zn}^{+2} + \text{Cu}$  b.  $\text{Zn}^{+2} + \text{Cu} \rightarrow \text{Cu}^{+2} + \text{Zn}$   
 c.  $2\text{Fe}(\text{OH})_3 \rightarrow 2\text{Fe} + \frac{3}{2}\text{O}_2 + 3\text{H}_2\text{O}$  d.  $2\text{NaCl} \rightarrow 2\text{Na} + \text{Cl}_2$

162. A force of 6 N acts horizontally on a stationary mass of 2 kg for 4s. the kinetic energy in Joule is:  
 a. 12                      b. 144                      c. 72                      d. 48
163. If it did not rain in time, there \_\_\_\_\_ a horrible famine.  
 a. Would have been                      b. will be  
 c. would be                      d. will have been
164. A person travels a distance  $x = 20 + \frac{1}{2}At^2$  where A is a constant. The acceleration of the person is:  
 a.  $A/4 \text{ ms}^{-2}$                       b.  $4/A \text{ ms}^{-2}$                       c.  $4 \text{ ms}^{-2}$                       d.  $4A \text{ ms}^{-2}$
165. Attraction of water molecules to the xylem vessels is called:  
 a. Adhesion                      b. Cohesion                      c. Collision                      d. Corrosion
166. In which of the following compounds hydrogen bonding is possible?  
 a.  $\text{PH}_3$                       b.  $\text{CH}_4$                       c.  $\text{NH}_3$                       d.  $\text{SiH}_4$
167. Which of the following are Ohmic materials?  
 a. Semiconductors                      b. Tungsten filament                      c. Thermistor                      d. Metals
168. Tobacco is a:  
 a. Long day plant                      b. Short day plant  
 c. Day neutral plant                      d. Intermediate plant
169. Ripening of fruits can be promoted by:  
 a. Gibberellic acid                      b. Indole acetic acid                      c. Florigen                      d. Ethylene gas
170. Sucrose sugar is considered as:  
 a. Monosaccharide                      b. Oligosachides                      c. Polysaccharides                      d. All of above
171. In the nuclear reaction  ${}_{11}\text{Na}^{24} \rightarrow {}_{12}\text{Mg}^{24} + X$  the particle X is :  
 a. Electron                      b. Positron                      c. Proton                      d. Neutron
172. The least toxic excretory product is:  
 a. Ammonia                      b. Urea                      c. Uric acid                      d. Fatty acid
173. Which one of the following will give an ionic product?  
 a.  $\text{CH}_3\text{CH}_2\text{OH} + \text{PCl}_5 \rightarrow$                       b.  $\text{CH}_3\text{CH}_2\text{OH} + \text{Na} \rightarrow$   
 c.  $\text{CH}_3\text{CH}_2\text{OH} + \text{PCl}_3 \rightarrow$                       d.  $\text{CH}_3\text{CH}_2\text{OH} + 5\text{OCl}_2 \rightarrow$
174. The angular displacement made by the minute hand of a watch after 5.0 minutes is:  
 a.  $30^\circ$                       b.  $120^\circ$                       c.  $180^\circ$                       d.  $360^\circ$
175. The intensity of a wave is:  
 a. Directly proportional to amplitude                      b. Directly proportional to (amplitude) $^2$   
 c. Inversely proportional to amplitude.                      d. Inversely proportional to (amplitude) $^2$
176. The diameter of human capillary is:  
 a. 5microns                      b. 6 microns                      c. 7 microns                      d. 8 microns
177. Organism phenotypically similar but genotypically different are said to be:  
 a. Monozygous                      b. Homozygous                      c. Heterozygous                      d. Multizygous
178. Which of the following can function as Lewis acid?  
 a.  $\text{CN}^-$                       b.  $\text{NH}_3$                       c.  $\text{CH}_3 - \text{O} - \text{CH}_3$                       d.  $\text{I}^+$
179. Conversion of alternating current into direct current is called:  
 a. Rectification                      b. Amplification                      c. Oscillation                      d. Regeneration
180. Gibberellin was isolated from:  
 a. An algae                      b. A fungus                      c. A bacterium                      d. A virus
181. All amino acids found in proteins are:  
 a.  $\alpha$ -amino acids                      b.  $\beta$ -amino acids  
 c. Both  $\alpha$  and  $\beta$                       d. None of the above

- ~~X~~



MEDICAL ENTRANCE TEST 2013

- Selaginella is the living member of:
  - Psilopsida
  - Lycopside
  - Sphenopsida
  - Pterosida
- Which of the following misnamed?
  - Aniline
  - Methyl naphthalene
  - Carboxyl benzene
  - Benzene Sulphonic acid
- On the ground the gravitational force on a satellite is  $W$ . what is the gravitational force on the satellite when at a height  $R/50$ , where  $R$  is the radius of earth?
  - $1.04 W$
  - $1.02 W$
  - $0.50 W$
  - $0.96 W$
- Contraction can be sustained for a long period of time by:
  - Skeletal muscles
  - Smooth muscles
  - Cardiac muscles
  - All of the above
- Aromatic compound generally burn with smoky flame because
  - Skeletal muscles
  - Smooth muscles
  - Cardiac muscles
  - All of the above
- If a wave can be polarized, it must be:
  - An electromagnetic wave
  - A stationary wave
  - Transverse wave
  - A longitudinal
- Amount of DNA in bacterial cell is:
  - 1 %
  - 2 %
  - 3 %
  - 4 %
- The smaller the value of  $P_{kb}$ :
  - The weaker the base
  - The stronger the base
  - The stronger the acid
  - None of the above
- In the nuclear reaction shown below what is the value of coefficient ' $\gamma$ '?  ${}_{92}U^{235} + {}_0n^1 \rightarrow {}_{36}Kr^{89} + \gamma + {}_{56}Ba^{144} + 200 MeV$ 
  - 0
  - 1
  - 2
  - 1
- Have you got a computer? She said.
  - She wanted to find whether I have a computer
  - She wanted to know whether I had a computer.
  - She wanted to know if I could use computer.
  - She was interested to know about my computer.
- Keratinized Epithelium is found in the:
  - Hair
  - Skin
  - Bone
  - Muscle
- Why is the boiling point of n - Pentane about 28 °C higher than that of its 2, 2 - Dimethylpropane isomer?
  - The area of contact between 2,2-Dimethylpropane is small which result in weak forces of attraction.
  - 2,2-dimethylpropane molecules repel each other.
  - N-Pentane molecules cannot come into closer contact with each other.
  - Shapes of molecules have not effect on boiling point.
- The vectors  $A$  and  $B$  are such that  $|A + B| = |A - B|$ , then the angle between the two vectors is:
  - $0^\circ$
  - $60^\circ$
  - $90^\circ$
  - $180^\circ$
- Mushrooms belong to:
  - Zygomycota
  - Ascomycota
  - Basidiomycota
  - Deuteromycota
- Which one the following will not undergo dehydrogenation?
  - $CH_3OH$
  - $(CH_3)_2CHOH$
  - $(CH_3)_3COH$
  - $CH_3CH_2OH$
- Which one is a polymer substance?
  - Glass
  - Iron
  - Plastic
  - copper



17. In thick development epiblast gives rise to:  
 a. Ectoderm & Endoderm b. Ectoderm & Mesoderm  
 c. Mesoderm & Endoderm d. Mesoderm only
18. The heat of combustion of hydrocarbon is very useful source of heat and power, considering the combustion reaction given below.  $CH_4(g) + O_{2(g)} \rightarrow CO_2(g) + 2H_2O$   $\Delta H$  for the reaction is  
 a.  $\Delta H = 213 \text{ Kcal / mole}$  b.  $\Delta H = -213 \text{ Kcal / mole}$   
 c.  $\Delta H = 426 \text{ Kcal / mole}$  d.  $\Delta H = 312 \text{ Kcal / mole}$
19. A zirconium nucleus is a  $\beta$ -emitter. The product nucleus is also a  $\beta$ -emitter. What is the final resulting nucleus of these two decays?  
 a.  $^{100}_{38}\text{Sr}$  b.  $^{100}_{42}\text{Mo}$  c.  $^{98}_{40}\text{Zr}$  d.  $^{102}_{40}\text{Zr}$
20. Add some milk and sugar ..... the tea.  
 a. To b. At c. In d. On
21. Rain water becomes acidic, when the pH-Value of rain water becomes.  
 a. Greater than 6 b. Greater than 6.5 c. Less than 5.6 d. Less than 5
22. Drinking water should be odorless, tasteless and live from turbidity and its pH should range between:  
 a. 6.0 to 7.0 b. 7.0 to 8.5 c. 4.5 to 6.0 d. 8.5 to 9.0
23. A raring car accelerates uniformly through three gear changes with the following average speeds:  $20 \text{ ms}^{-1}$  for 2.0s;  $40 \text{ ms}^{-1}$  for 2.0s and  $60 \text{ ms}^{-1}$  for 6.0s what is the overall average speed of the car:  
 a.  $12 \text{ ms}^{-1}$  b.  $13.3 \text{ ms}^{-1}$  c.  $40 \text{ ms}^{-1}$  d.  $48 \text{ ms}^{-1}$
24. Change in gene frequencies in small population by chance is called:  
 a. Gene pool b. Genetic drift c. Gene mutation d. Gene flow
25.  $N_2(g) + 3H_2(g) \rightarrow 2NH_3(g)$   $\Delta H = 46.1 \text{ kJ / mole}$ . for the reaction above which statement is true about:  
 a.  $K_{eq}$  increases with increase in temperature. b.  $K_{eq}$  decreases with Increase in temperature  
 c.  $K_{eq}$  decreases with Increase in Pressure d.  $K_{eq}$  increases with decrease in pressure
26. Which of the following lists contains scalar quantities only?  
 a. Mass, acceleration, temperature, kinetic energy b. Mass, volume, electrical potential, kinetic energy  
 c. Acceleration, temperature, volume, electric charge. d. Momentum, electric intensity, density, magnetic flux.
27. Number of chromosomes in Tobacco is:  
 a. 45 b. 48 c. 46 d. 47
28. How many molecules are present in 0.20 g of Hydrogen gas?  
 a.  $\frac{0.20}{1.008} \times 6.02 \times 10^{23}$  b.  $0.20 \times 2.016$  c.  $\frac{0.20}{2.016} \times 6.02 \times 10^{23}$  d.  $\frac{1.008}{0.70} \times 6.02 \times 10^{23}$
29. A Generator produces 100 KW of power at a potential difference of 10KV. The power is transmitted through cables of total resistance 5 $\Omega$ . How much power is dissipated in the cables?  
 a. 50 W b. 750 W c. 500 W d. 1000 W
30. I keep the butter in the fridge. "Select the correct passive voice":  
 a. In the fridge the butter is kept by me! b. By me is the butter kept in the fridge  
 c. The butter is kept by me in the fridge. d. Kept in the fridge by me in the butter.
31. Appendix is vestigial in man but may play role in:  
 a. Digestion b. Excretion c. Immunity d. Movement
32. In the nuclear reaction  $^{223}_{87}\text{Fr} \rightarrow ^{223}_{88}\text{Ra} + x$  particle x is:  
 a. A neutron b. A proton c. An electron d. An alpha particle
33. A body of mass "m" moves at constant speed " $v$ " for a distance " $s$ " against a constant force " $H$ " what is the power required to sustain this motion?  
 a.  $r$  b.  $\frac{1}{3}mv^2$  c.  $\frac{1}{3}Fs$  d.  $Fs$

34. A single molecule of hemoglobin is composed of:
- Three polypeptide chains
  - Four polypeptide chains
  - Five Polypeptide Chain
  - Six polypeptide Chain
35. Which of the following functional groups are deactivating and not ortho, para directing?
- R
  - COR
  - NH<sub>2</sub>
  - NR<sub>2</sub>
36. In which of the following pairs are both substances normally crystalline?
- Copper and diamond
  - Copper and glass
  - Copper and rubber
  - Diamond and glass
37. Urea formation occurs in:
- Kidney
  - Liver
  - Spleen
  - Lungs
38. Which one of the following is strongest acid?
- CH<sub>3</sub> COOH
  - CH<sub>3</sub> CH<sub>2</sub> COOH
  - C<sub>6</sub> H<sub>5</sub> CG<sub>2</sub> COOH
  - FCH<sub>2</sub> COOH
39. Ultraviolet rays differ from the X - rays in that ultraviolet rays:
- Cannot be diffracted
  - Cannot be polarized
  - Have a low frequency
  - Do not affect a photographic plate
40. "ALLUSION" means:
- An idea haunting one's mind
  - A casual or indirect reference
  - Have a low frequency
  - Do not affect a photographic plate
41. Phagocytosis, pinocytosis and autophagy are the function of:
- Golgi- Apparatus
  - Lysosomes
  - Peroxisomes
  - Glyoxisomes
42. To distinguish among primary, secondary and tertiary alcohols which of the following tests is used?
- Benedicts reagent
  - Tollen's reagent
  - Lucas test
  - None of above
43. A students measures a current as 0.5 A. which of the following correctly expresses this result?
- 50 mA
  - 50 MA
  - 500 mA
  - 500 MA
44. Spiders belong to class:
- Crustacean
  - Myriapoda
  - Arachnidan
  - Hexapoda
45. Which one of the following; compounds participates in hydrogen bonding?
- CH<sub>3</sub> Cl
  - CH<sub>3</sub> OCH<sub>3</sub>
  - CH<sub>3</sub> NH<sub>2</sub>
  - C<sub>6</sub> H<sub>5</sub> OCH<sub>3</sub>
46. If a body of mass "m" is released in a vacuum just above the surface of a planet of mass "M" and radius "R". What would be its gravitational acceleration?
- $\frac{GMm}{R}$
  - $\frac{GMm}{R^2}$
  - $\frac{GM}{R^2}$
  - $\frac{GM}{R^2}$
47. Polysaccharide cellulose is the building material of:
- Primary cell - wall
  - Secondary cell - wall
  - Middle lamella
  - Plasma membrane
48. Which of the following structure has a bond formed by an over all of SP<sup>2</sup> hybrid orbital with that of SP hybrid orbital?
- HC = CH
  - H<sub>2</sub>C = CH<sub>2</sub>
  - H<sub>2</sub>C = C = CH<sub>2</sub>
  - CH<sub>2</sub> = CHCH<sub>3</sub>
49. The first law of thermodynamics is a statement which implies that:
- No heat or leaves the system
  - the temperature remains constant.
  - All work is mechanical
  - Energy is conserved
50. GET HOLD OF ONESELF Implies:
- To start running
  - To catch a thief
  - To become calm
  - To feel exhausted
51. Lobsters belong to class:
- Myriapoda
  - Arachnidan
  - Hexapoda
  - Crustacean

52. The bond angle between H – C – C bond in ethane is:  
 a. 109.5                      b. 120                      c. 90                      d. 107.5
53. The function of a main transformer is to convert:  
 a. One direct voltage to another direct voltage of different magnitude.  
 b. One alternating voltage to another alternating voltage of different magnitude.  
 c. A high value alternating voltage to low value direct voltage.  
 d. A high value alternating current to low value direct voltage.
54. Pigeon odour is released from the water bloom of:  
 a. Slime mold                      b. Water mold                      c. Cyano bacteria                      d. Algae ponds
55. What will be the product when PCT5 reacts with acetic acid?  
 a.  $\text{CH}_3\text{Cl}$                       b.  $\text{CH}_3\text{COCl}$                       c.  $\text{CH}_3\text{COCl}_2$                       d.  $\text{CH}_3\text{CH}_2\text{COCl}$
56. When monochromatic light of wavelength  $5.0 \times 10^{-7} \text{ m}$  is incident normally on a plane diffraction grating the second order diffraction lines are formed at angles of  $30^\circ$  to the normal to the grating. What is the number of lines per millimeter of the grating?  
 a. 250                      b. 500                      c. 1000                      d. 4000
57. Brunner's glands are found in:  
 a. Stomach                      b. Duodenum                      c. Ileum                      d. Colon
58. Which type of isomerism is being exhibited by  $\text{FCH}=\text{CHF}$ ?  
 a. Chain isomerism                      b. Structural isomerism  
 c. Geometrical isomerism                      d. Position isomerism
59. During the experiment one measured the mass of mosquito and found it  $1.20 \times 10^{-5} \text{ kg}$ . the number of significant figures in this case is:  
 a. Two                      b. Three                      c. Five                      d. One
60. Select the correct sentence:  
 a. My feet seemed hardly to touch the earth.                      b. My feet hardly seemed to touch the earth.  
 c. Hardly my feet seemed to touch the earth.                      d. My feet seemed to touch the earth hardly.
61. An organism that adopts saprophytic mode of nutrition during part of its life is called:  
 a. Facultative saprophyte                      b. Facultative parasite  
 c. Obligate saprophyte                      d. obligate parasite
62. Which is the correct product formed when monohydric alcohol reacts with sodium metal?  
 a. Alkene                      b. Sodium Alkoxide                      c. Alkane                      d. Ether
63. If a hole is bored through the center of the earth and a pebble is dropped in it, then it will:  
 a. Stop at the center of the earth                      b. Drop to the other side.  
 c. Execute SHM                      d. None of the above
64. Erepsin acts upon:  
 a. Polypeptides                      b. Carbohydrates                      c. Dipeptides                      d. Fats
65. Coal, Natural gas and petroleum are generally called:  
 a. Hydrocarbons                      b. Natural fuels                      c. Fossil fuels                      d. Crude oil
66. In vibrating cord the point where the particles are stationary is called:  
 a. Node                      b. Anti – Node                      c. Crest                      d. Trough
67. Microsporum furfur causes:  
 a. Athlete's foot                      b. ring worm/ergot                      c. dandruff                      d. ergot
68. Benzene reacts with acetyl chloride in the presence of lewis acid forming:  
 a. Chlorobenzene                      b. Acetophenone                      c. Benzoic acid                      d. benzophenone
69. The minimum frequency of incident light required to emit photoelectrons from the metal surface is called:  
 a. Critical frequency                      b. Threshold frequency  
 c. work function                      d. None of the above

70. In a composition writing exercise, "PRECISE" means:
- A synopsis for writing an essay in a degree level examination
  - A critique highlighting the weak point of a feature film story.
  - A resume of the commercial achievements spread over a year.
  - A short summary of the crucial ideas of a longer composition.
71. The gills are covered by operculum in:
- Bony fishes
  - Cartilaginous fishes
  - Lung fishes
  - Jawless fishes
72. When 2-Bromo-2-methyl propane undergoes unimolecular elimination reaction, the product obtained will be:
- 2-Methyl propane
  - 2-Methyl propane
  - 2-Methyl-1 propanol
  - 2-pentanol
73. When lead,  $_{82}Pb^{214}$ , emits a  $\beta$ -particle, the resultant nucleus will be:
- $_{82}Bi^{114}$
  - $_{84}Po^{214}$
  - $_{82}Pb^{213}$
  - $_{81}Tl^{214}$
74. A sporophyte that depends on gametophytes is:
- Adiantum
  - Pinus
  - Marchantia
  - Mustard-plant
75. Which is not correct about polyvinyl chloride?
- It is used in large scale production of cable insulator
  - It is a copolymer
  - It is a homopolymer
  - It is used in the manufacturing of pipes
76. If two cars are moving with velocity 10 m/s and 5 m/s in opposite direction to each other, then their relative velocity with respect to one another will be:
- 5 m/s
  - 10 m/s
  - 5 m/s
  - 15 m/s
77. Replication progresses at a rate of about 50 base pairs per second in:
- Bacteria
  - Virus
  - Eukaryote
  - All of above
78. Vinylacetate monomer is prepared by the reaction of acetaldehyde and acetic anhydride. The catalyst employed is:
- $FeCl_3$
  - $Al_2O_3$
  - $V_2O_5$
  - $Cr_2O_3$
79. When released from a height a ball falls 5m in 1s. in 4s after release it will fall.
- 40m
  - 80m
  - 20m
  - 100m
80. "I saw him yesterday" she said. Select the correct indirect speech
- She told that she had seen him yesterday
  - She said that she had seen him the day before.
  - She told that she could see him the day before.
  - She said that she would see him the day before.
81. The pigments of chlorophyll a, b, and carotenoids are present in:
- Stroma
  - Grana
  - Thylakoid membrane
  - Crista
82. Thermal processing of industrial waste material aims at:
- Burning of waste material in pits
  - Converting the solid waste into useful products by thermal treatment.
  - Energy recovery from organic matter prior to its final disposal
  - Size reduction and compaction by thermal process.
83. If the momentum of a body decreases by 20% the percentage decrease in K.E will be:
- 44%
  - 36%
  - 28%
  - 20%
84. Which one of the following animals is filter feeder?
- Teeth
  - Sycon
  - Fresh water muscle
  - Jelly fish
85. Which one is not a nitrogenous fertilizer?
- Ammonium
  - Triple phosphate
  - Urea
  - Nitro phosphate
86. The antimatter of electron is:
- Photon
  - Positron
  - Proton
  - Antineutrino
87. In chlorophyll - b the porphyrine ring is attached to the:
- Methyl group
  - Carboxyl group
  - Aldehyde group
  - Hydroxyl group



88. Which of the following titrants would most likely be used as its own indicator in acid medium?
- $K_2Cr_2O_7$
  - Iodine
  - $KMnO_4$
  - $H_2O_2$
89. An organ pipe is open at both ends at its fundamental frequency. Neglecting any end effects, what wavelength is formed by this pipe in this mode of vibration. If the pipe is two meter long?
- 2m
  - 4m
  - 6m
  - 8m
90. Fire destroyed the top floor of the building:
- The top floor of the building got destroyed by fire
  - By fire was destroyed the top floor of the building
  - Destroyed by fire was the top floor of the building
  - The top floor of the building was destroyed by fire.
91. Myoglobin is found in:
- Bone
  - Connective tissue
  - Muscles
  - Cartilage
92. The atomic number of scandium is 21. What is its ground state electronic configuration?
- $1s^2 2s^2 2p^6 3s^2 3p^6 3d^3$
  - $1s^2 2s^2 2p^6 3s^2 3p^6 3d^3 4s^1$
  - $1s^2 2s^2 2p^6 3s^2 3p^6 3d^3 4s^2$
  - $1s^2 2s^2 2p^6 3s^2 3p^6 3d^3 4p^1$
93. A body in equilibrium must not have:
- Kinetic energy
  - Velocity
  - Momentum
  - Acceleration
94. The centre of porphyrine ring of haemoglobin is occupied by:
- Magnesium
  - Sodium
  - Iron
  - Potassium
95. The differences in energy between different states of bond vibrations in a molecule correspond to which electromagnetic region?
- Microwave
  - Infrared
  - Visible
  - X-rays
96. Three equivalent resistors connected in parallel have equivalent resistance  $R/3$ . When they are connected in series then the equivalent resistance is:
- $3R$
  - $R/3$
  - $R$
  - $2R$
97. Thalassemia major is also known as:
- Sickle cell anemia
  - Cooley's anemia
  - Mycocystic anemia
  - Nutritional anemia
98.  $40.0 \text{ dm}^3$  of an ideal gas at  $25^\circ\text{C}$  and  $750 \text{ mm Hg}$  is expanded to  $50.0 \text{ dm}^3$ . The pressure of the gas changed to  $765 \text{ mm Hg}$ . What is the temperature of the gas?
- $\frac{(2912)(750)(50)}{(40)(765)}$
  - $\frac{(298)(750)(40)}{(50)(765)}$
  - $\frac{298(765)(50)}{(750)(40)}$
  - $\frac{(750)(40)}{(298)(765)(50)}$
99. Ohm's law is valid only for:
- Thermistor
  - Bulb filament
  - Metals
  - Semiconductors
100. "APPRAISE" means:
- Tell a story at bed time
  - Evaluate the quality of
  - Do shopping in a bazaar
  - Praise a man out of place
101. Premature death of plants is caused by the deficiency of:
- Magnesium
  - Iron
  - Phosphorus
  - Potassium
102. Which of the given formulae would be used to calculate the wave length of an electron? Given its velocity ( $v$ ), its mass ( $m$ ) and constant  $h$ :
- $\lambda = hmv$
  - $\lambda = \frac{h}{mv}$
  - $\lambda = \frac{mv}{h}$
  - $\lambda = \frac{mv^2}{h}$
103. The energy stored in a charged capacitor is given by:
- $\frac{1}{2}QV$
  - $\frac{1}{2}CV$
  - $\frac{1}{2}C^2V$
  - $\frac{1}{2}QV^2$
104. The birds excrete:
- Ammonia
  - Urea
  - Uric acid
  - Acetic acid



105. Which electronic sub-shell do the Lanthanides have incompletely filled?  
 a. 3f                      b. 4f                      c. 5f                      d. 6f
106. A wire has a resistance "R" if its length is doubled and radius is reduced to half then its resistance will become:  
 a. 2R                      b. 4R                      c. 8R                      d. 16R
107. Bulliform cells are present in:  
 a. Grasses                      b. Under ground stems                      c. Fruit nuts                      d. Cabbage leaves
108. How many different values can m, assume in the electron sub-shell designated by quantum number  $n = 5$ ,  $l = 4$ ?  
 a. 4                      b. 5                      c. 6                      d. 9
109. The potential difference between a pair of similar and parallel conducting plates is known. What additional information is needed in order to find the electric field strength between the plates?  
 a. Separation of the plate                      b. Separation and area of the plates  
 c. Permittivity of the medium; separation of the plates  
 d. Permittivity of the medium; separation and area of the plates
110. Please help someone the house is ..... Fire.  
 a. At                      b. In                      c. On                      d. By
111. Bone is surrounded by a membrane called:  
 a. Perichondrium                      b. Prostomium                      c. Perimycium                      d. Periosteum
112. Which of the following is Hypochlorous acid?  
 a. HClO                      b. HClO<sub>2</sub>                      c. HClO<sub>3</sub>                      d. HClO<sub>4</sub>
113. A capacitor which has a capacitance of 1 farad will:  
 a. Be fully charged in 1 second by a current of 1 ampere  
 b. Store 1 coulomb of charge at a potential difference of 1 volt.  
 c. Gain 1 joule of energy when 1 coulomb of charge is stored on it.  
 d. Discharge in 1 second when connected across a resistor of resistance 1 ohm.
114. A hormone that prevents senescence in leaves, is:  
 a. Auxin                      b. Gibberellins                      c. Cytokinin                      d. Absciscic acid
115. If 20.0 cm<sup>3</sup> of 0.5 M solution is diluted to 1.0 dm<sup>3</sup>. What will be its new concentration?  
 a. 0.001 M                      b. 0.01 M                      c. 1.0 M                      d. 10.0 M
116. The internal energy of a fixed mass of an ideal gas depends on:  
 a. Pressure, but not volume or temperature                      b. Temperature, but not pressure or volume.  
 c. Volume, but not pressure or temperature                      d. Pressure and temperature, but not volume
117. Messer's capsules are the receptors for:  
 a. Temperature                      b. Pain                      c. Pressure                      d. Touch
118. Which one of the following oxides exhibit amphoteric properties?  
 a. K<sub>2</sub>O                      b. MgO                      c. ZnO                      d. CaO
119. A spring obeying Hook's law has an unstretched length of 50 mm and a spring content of 400 Nm<sup>-1</sup>. What is the tension in the spring when it overall length is 70 mm?  
 a. 8.0 N                      b. 28 N                      c. 160 N                      d. 400 N
120. "CRANKY SPOUSE" implies:  
 a. A carefully selected loving partner of life                      b. Fussy and bad tempered wife or husband.  
 c. Money squandering younger second wife                      d. A device fitted behind the rear seat of car.
121. Florigen is produced by:  
 a. Flowers                      b. Flower-buds                      c. Leaves                      d. Fruits

122. Which one of the following salts will produce an alkaline solution when dissolved in water?
- a.  $\text{NH}_4\text{Cl}$                       b.  $\text{NaNO}_3$                       c.  $\text{Na}_2\text{CO}_2$                       d.  $\text{Na}_2\text{SO}_4$
123. Which thermodynamics temperature is equivalent to  $501.85^\circ\text{C}$ ?
- a. 775.00 K                      b. 774.85 K                      c. 228.85 K                      d. 228.70 K
124. Who used puzzle boxes in experiment on animal learning?
- a. Pavlov                      b. E.L. thordike                      c. Konrad Lorenz                      d. Kohler
125. A neutral atom A has the electronic configuration:  $1s^2 2s^2 2p^6 3s^2 3p^6 4s^1$ . It will gain or lose electron's to form most probably an ion of valence
- a. -2                      b. -1                      c. +2                      d. +1
126. Which statement correctly describes a nucleon?
- a. A neutron or a proton                      b. A neutron, proton or an electron  
c. Any atomic nucleus                      d. A radioactive atomic nucleus
127. Ozone gas is:
- a. Greenish, tasteless and light                      b. Greenish blue, bitter in taste  
c. Blue, poisonous and explosive                      d. Purple yellow, non poisonous, non explosive
128. Which one of the following is a lewis acid?
- a.  $(\text{CH}_3)_3\text{N}$                       b.  $\text{PH}_3$                       c.  $\text{BF}_3$                       d.  $\text{O}_2$
129. An object travels at constant speed around a circle of radius 1.0 m in 1.0 s. what is the magnitude of its acceleration?
- a. Zero                      b.  $1.0 \text{ ms}^{-2}$                       c.  $2\pi \text{ ms}^{-1}$                       d.  $4\pi^2 \text{ ms}^{-2}$
130. Select the correct sentence:
- a. Farid and Javed both are good swimmers.                      b. Both Farid and Javed are good swimmers.  
c. Good swimmers are Farid both.                      d. Swimmers are good both Farid and Javed.
131. Which one of the following animals is viviparous?
- a. Rat                      b. kangaroo                      c. Duck billed platypus                      d. Spiny & eater
132. According to molecular orbital theory which one of the following will indicate two unpaired electrons?
- a.  $\text{N}_2$                       b.  $\text{O}_2$                       c.  $\text{F}_2$                       d.  $\text{Hc}_2^{+2}$
133. An alternating current "I/A" varies with time "t/s" according to the equation  $I = \sin(100\pi t)$  What is the mean power developed by the current in resistive load of resistance  $10 \Omega$ .
- a. 125 W                      b. 160 W                      c. 250 W                      d. 500 w
134. Cristea of mitochondria are the sties of:
- a. Electron transport chains                      b. Photophosphorylation  
c. Krebs cycle                      d. Glycolysis
135. Which one of the following compound will show covalent bonding?
- a.  $\text{CaF}_2$                       b.  $\text{MgO}$                       c.  $\text{KCl}$                       d.  $\text{SiI}_4$
136. The rate of change of momentum of a body falling freely under gravity is equal to its:
- a. Impulse                      b. Kinetic energy                      c. Power                      d. weight
137. Muscles develop from:
- a. ectoderm                      b. mesoderm                      c. endoderm                      d. All of above
138. Which one of the following was a covalent bonding by the overlap of sp hybridized orbital with p or bital:
- a.  $\text{BF}_3$                       b.  $\text{H}_2\text{O}$                       c.  $\text{BeCl}_2$                       d.  $\text{NiI}_2$
139. Radioactive activity is affected by:
- a. Temperature                      b. Pressure                      c. Humidity level                      d. None of above

140. A "ELEGY" is a poem written:  
 a. In the memory of a little child  
 b. On the sighting of an old tutor  
 c. In the love of dear sweetheart  
 d. On the death of someone dear
141. Bacteria maintain their survival by the formation of:  
 a. Hormogonia  
 b. Akinetes  
 c. Endospores  
 d. Zygosporos
142. The change in enthalpy at constant pressure,  $\Delta H$  is equal to:  
 a.  $\Delta H = q + P\Delta V$   
 b.  $\Delta H = \Delta E - P\Delta V$   
 c.  $\Delta H = \Delta E + P\Delta V$   
 d.  $\Delta H = q - P\Delta V$
143. Four gas molecules have the speed  $8.0 \text{ ms}^{-1}$ ,  $6.0 \text{ ms}^{-1}$ ,  $6.0 \text{ ms}^{-1}$  and  $\sqrt{6} \text{ ms}^{-1}$ . What is their root mean square speed?  
 a.  $8.0 \text{ ms}^{-1}$   
 b.  $6.0 \text{ ms}^{-1}$   
 c.  $5.0 \text{ ms}^{-1}$   
 d.  $7.0 \text{ ms}^{-1}$
144. Avery, Macleod and McCarty repeated the Griffith experiment in the year:  
 a. 1869  
 b. 1928  
 c. 1944  
 d. 1952
145. Considering the standard reduction chart, the strong reducing agent value is:  
 a. Small negative values  
 b. Large negative values  
 c. Small positive values  
 d. Large positive values
146. An organ pipe of length  $t$  has one end closed but the other end open. What is the wavelength of the fundamental node emitted?  
 a. Slightly smaller than  $4l$   
 b. slightly larger than  $4l$   
 c. Roughly equal to  $3/2$   
 d. slightly larger than  $2l$
147. Microvillae are also called:  
 a. Leaf veins  
 b. Cristae  
 c. Capillaries  
 d. Leaf midribs
148. Which statement is correct while recharging the automobile battery?  
 a. Pb is converted to  $\text{PbO}_2$   
 b.  $\text{PbSO}_4$  is converted to Pb  
 c. Pb is converted to  $\text{PbSO}_4$   
 d. None of the above
149. A vertical steel wire X of circular cross – section is used to suspend a load. A second wire Y, made of the same material but having twice the length and twice the diameter is used to suspend an equal load. What is the value of the ratio  $\frac{\text{extension of wire X}}{\text{extension of wire Y}}$ ?  
 a.  $1/4$   
 b. 1  
 c. 2  
 d. 4
150. My children don't approve ..... my smoking.  
 a. I  
 b. Of  
 c. On  
 d. at
151. Cell death due to tissue damage is called:  
 a. Cancer  
 b. Apoptosis  
 c. Necrosis  
 d. Metastasis
152. You are required to test the presence of  $\text{NH}_4^+$  Ion in water. Which of the following reagent will solve your problem?  
 a. Dimethylglyoxime  
 b. Tollen's reagent  
 c. Nessler's reagent  
 d. Magneson reagent
153. Drops X and Y, of the same oil, remained stationary in air in the same electric field. After the field was switched off, X fell more quickly than Y. which deduction can be made?  
 a. X had a greater charge than Y  
 b. Y had a greater charge than X  
 c. Parallel but opposite  
 d. Parallel, opposite and folded spirally.
154. The two chains of DNA occur side by side in a:  
 a. Straight direction  
 b. Parallel but straight  
 c. Parallel but opposite  
 d. Parallel, opposite and folded spirally

155. Which of the following furnaces is used for the production of wrought iron?
- Open hearth furnace
  - Reverberatory furnace
  - Bessemer converter
  - Blast furnace
156. A mass accelerates uniformly when the resultant force acting on it:
- Is Zero
  - Is constant but not zero
  - Increases uniformly with respect to time.
  - Is proportional to the displacement of the mass from a fixed point.
157. In which of the following the phenotypic and genotypic ratio is the same?
- Co-dominance
  - Over dominance
  - Epitasis (epistasis)
  - Incomplete dominance
158. The variable oxidation states of transition elements is attributed to the involvement of as well as:
- Unpaired  $d$  electrons
  - Unpaired  $p$  electrons
  - Unpaired  $f$  electrons
  - Paired up  $d$  electrons
159. A sample of carbon-12 has a mass of 3.0 g, which expression gives the number of atoms in the sample? (Note: the symbol for the Avogadro constant)
- $0.0030 N_A$
  - $0.25 N_A$
  - $3.0 N_A$
  - $4.0 N_A$
160. "BRIAN THE DOG" implies:
- Walk on ice-cream
  - swallow ice-cubes.
  - Chisel an ice-block
  - to make a beginning
161. A cell-wall that is composed of sugar and amino acids is called:
- Murein
  - Chitin
  - Lignin
  - Pectin
162. In contact process for the manufacture of sulphuric acid, sulphur trioxide is dissolved in sulphuric acid in form of oleum. Its molecular formula is:
- $H_2SO_4$
  - $H_2S_2O_5$
  - $H_2S_2O_6$
  - $H_2S_2O_7$
163. Which of the following lists contains three regions of the electromagnetic spectrum in order of increasing frequency?
- Gamma rays, ultraviolet rays, radio waves.
  - Gamma rays, visible radiation, ultraviolet rays.
  - Microwaves, ultraviolet rays, X-rays.
  - Radio waves, visible radiation, infrared radiation.
164. A plant or animal modified by genetic engineering is called:
- Transgenic
  - Probe
  - Recombinant
  - Plasmid
165. Ethylene diamine tetraacetate ion (EDTA) is a opolydentate ligand it bonds to central metal atom through:
- Two of its atoms
  - Three of its atoms
  - Four of its atoms
  - Six of its atoms
166. A source contains initially  $N_0$  nuclei of a radioactive nuclide. How many of these nuclei have decayed after a time interval of three half lives?
- $N_0/8$
  - $2N_0/3$
  - $N_0/3$
  - $7N_0/9$
167. When the entire body of a bacterium is covered by flagella, such a bacterium is called:
- Atrocious
  - Lophotrichous
  - Lampitrichous
  - Peritrichous
168. Phosphorus trihalides are readily hydrolysed as shown below:  $PX_3 + 3H_2O \rightarrow H_3PO_3 + 3HX$ . Generally moving from fluorine to iodine rate of hydrolysis:
- Increases
  - Decreases
  - Remains unchanged
  - First increases and then decreases
169. Two monochromatic radiations X and Y are incident normally on a diffraction grating. The second order intensity maximum for X coincides with the third order intensity maximum for Y. what is the ratio  $\frac{\text{wavelength of X}}{\text{wavelength of Y}}$
- $\frac{1}{2}$
  - $\frac{2}{3}$
  - $\frac{3}{2}$
  - 2

170. Select the correct sentence:
- Certainly she is the best person for the job.
  - She is the best person for the job certainly.
  - She is certainly the best person for the job.
  - The best person certainly she is for the job.
171. Nucleus was discovered by:
- Waldyer
  - T.H. Morgon
  - Robert Brown
  - Kohler
172. Which of the following is not a Nucleophiles?
- $\text{NH}_3$
  - $\text{HO}$
  - $\text{HC} = \text{CH}$
  - $\text{Br}$
173. A sound wave of frequency 400 Hz is travelling in a gas at a speed of  $320 \text{ ms}^{-1}$ . What is the phase difference between two points 0.2 m apart in the direction of the travel?
- $\frac{n}{1} \text{ rad}$
  - $\frac{n}{2} \text{ rad}$
  - $\frac{2n}{5} \text{ rad}$
  - $\frac{4n}{5} \text{ rad}$
174. Stroma of chloroplasts carries the fixation of:
- $\text{N}_2$
  - $\text{O}_2$
  - $\text{CO}_2$
  - $\text{NH}_3$
175. Half cell reaction standard reduction potential,  $E^\circ$
- |  |       |
|--|-------|
| $\text{Fe}^{2+} + 2\text{e}^- \rightarrow \text{Fe}$ | -0.41 |
| $\text{Cu}^{2+} + 2\text{e}^- \rightarrow \text{Cu}$ | 0.34  |
| $\text{Ni}^{2+} + 2\text{e}^- \rightarrow \text{Ni}$ | -0.23 |
| $\text{Zn}^{2+} + 2\text{e}^- \rightarrow \text{Zn}$ | -0.76 |
- Referring to the table above which metal could be used to prevent iron from corrosion?
- Cu only
  - Zn only
  - Cu & Ni only
  - Ni & Zn only
176. Which of the following is the unit of pressure?
- $\text{Kg ms}^{-1}$
  - $\text{Kg m}^{-1} \text{s}^{-2}$
  - $\text{Kg m}^2 \text{s}^{-2}$
  - $\text{Kg m}^{-2} \text{s}^{-1}$
177. What will be the anti-codon of AUG?
- TAC
  - ATC
  - UAC
  - UTC
178. Lipids are naturally occurring substances which are chemically:
- Proteins
  - Amino acids
  - Carbohydrates
  - Esters
179. Satellites revolve around the earth in a circular orbit. What is the relationship between the radius of their orbits, and their speeds?
- $V \propto r^2$
  - $V \propto r$
  - $V^2 \propto 1/r$
  - $\propto 1/r^2$
180. "DENOUNCE" means:
- To reject straight away
  - To praise in a meeting
  - to condemn publicly
  - to negotiate secretly
181. Potato plastids, which store starch, are known as:
- Paramylum
  - Amyloplasts
  - Leucoplasts
  - Glycoplasts
182. A salt AB ionizes as  $\text{AB} = \text{A}^+ + \text{B}^-$ . The solubility product for the salt AB is  $4.0 \times 10^{-4}$  the molar solubility of the salt is:
- $4.0 \times 10^{-4}$
  - $2.0 \times 10^{-2} \text{ M}$
  - $8.0 \times 10^{-4} \text{ M}$
  - $2.0 \times 10^{-4} \text{ M}$
183. Of the following properties of a wave, the one that is independent of the others is its:
- Amplitude
  - Wavelength
  - Speed
  - Frequency
184. The primers used in polymerase chain reaction has a sequence of bases:
- 8
  - 12
  - 16
  - 20



185. Which has the lowest temperature?  
 a. Troposphere b. Stratosphere c. Mesosphere d. Thermosphere
186. The Prefix "tera" stands for:  
 a.  $10^4$  b.  $10^2$  c.  $10^3$  d.  $10^{12}$
187. The phenomenon that a seed fails to germinate in spite of providing all conditions necessary for germination is called:  
 a. Photoperiodism b. Vernalization c. Dormancy d. Phytochrome
188. Which one is least reactive towards a reaction with Na?  
 a.  $\text{CH}_3 - \text{OH}$  b.  $\text{CH}_3 - \text{Cl}$  c.  $\text{CH}_3 - \text{O} - \text{CH}_3$  d.  $\text{CH}_3 - \text{COOH}$
189. The force "F" on a charged particle "q" moving with velocity "v" parallel to magnetic field "B" is given by:  
 a.  $F = qvB$  b.  $F = qE$  c.  $F = 0$  d. None of above
190. The police arrested him for dangerous driving. Select the correct passive voice:  
 a. He was arrested for dangerous driving by the police  
 b. He was arrested by the police for dangerous driving  
 c. For dangerous driving he was arrested by the police.  
 d. By the police was he arrested for dangerous driving.
191. Which one of the following is a sex-linked inheritance?  
 a. Baldness b. Albinism c. Eye colour d. Myopia
192. The element which has the smallest atomic radius is:  
 a. Fe b. Co c. Ni d. Cu
193. Which one of the following has negative temperature coefficient?  
 a. Copper b. Thermistor c. Soft iron d. Platinum
194. Pulvinus tissues are present at:  
 a. Leaf tip b. Leaf margin c. Leaf base d. Middle vein
195. Which isomers have difference in both their physical and chemical properties?  
 a. Chain isomers b. Position isomers  
 c. Functional group isomers d. Both A and B
196. When the light from two lamps falls on a screen, no interference pattern can be obtained. Why is this?  
 a. The lamps are not point sources b. The lamps emit light of different amplitudes  
 c. The light from the lamps is not coherent d. The light from the lamps is white
197. The valve between left ventricle is called:  
 a. Semi lunar valve b. Bicuspid valve  
 c. Tricuspid valve d. Pulmonary valve
198. Which of the following tests can be used to distinguish between aldehydes and ketones?  
 a. Bayer's test b. Fehling's test c. Silver mirror test d. Both B & C
199. One way of expressing the equation of state for an ideal gas is by the equation  $pV = NkT$ . What do "N" and "K" represent respectively?  
 a. Avogadro constant; Boltzmann constant b. Avogadro constant; Molar gas constant  
 c. Total number of molecules; Boltzmann constant d. Total number of molecules; Avogadro constant
200. "I have been a Spain," he told me. Select the correct Indirect speech:  
 a. He told me that he could visit Spain.  
 b. He told me that he has visited Spain.  
 c. He told me that he had been to Spain.  
 d. He told me that he has been to Spain.

## ENGINEERING ENTRANCE TEST 2010

1. The graph of  $y^2 = 4ax$  is symmetric about:
  - a. y-axis
  - b. x-axis
  - c. Origin
  - d. None of above
2. She wears sun glasses to \_\_\_\_\_ her eyes from the harmful rays of the sun.
  - a. Prevent
  - b. Protect
  - c. Defend
  - d. Shelter
3. The solubility of solute depends on:
  - a. Temperature of solution
  - b. Quantity of solvent
  - c. Quantity solute
  - d. All the three choices
4. Several resistors are connected in parallel the resistance of their equivalent resistor
  - a. Increase
  - b. Decrease
  - c. Not change
  - d. None of these
5. The lines  $6x+2y+8=0$  &  $x-3y+7=0$  are:
  - a. Perpendicular
  - b. Parallel
  - c. Passing through origin
  - d. None of the above
6. The number of electron in one coulomb of charge are:
  - a.  $6.25 \times 10^{21}$
  - b.  $1.6 \times 10^{-27}$
  - c.  $6.25 \times 10^{18}$
  - d.  $0.6 \times 10^{-19}$
7. By definition  $n \frac{(A \cap B)}{n(B)}$  defines:
  - a.  $P(A/B)$
  - b.  $P(B/A)$
  - c.  $P(A \cap B)$
  - d.  $P(A \cup B)$
8. The noisy behaviour of the children \_\_\_\_\_ their teacher.
  - a. Aggrieved
  - b. Impeached
  - c. Tempered
  - d. Incensed
9. With increase in atomic number the basic character of s-block elements:
  - a. Decreases
  - b. Increases
  - c. First increases and then decreases
  - d. Does not change
10. For irreversible cycle the net change of entropy:
  - a. Remains constant
  - b. Increases
  - c. Decreases
  - d. None of these
11. The variables involve in a linear problem are called \_\_\_\_\_ constraints:
  - a. Non-negative
  - b. Positive
  - c. Problem
  - d. Both A and C
12. In  $\text{CH}_3\text{S} + \text{H}_2\text{O} \rightarrow \text{H}_3\text{O}^+ + \text{HS}^-$ 
  - a. Oxidation reaction
  - b. Reduction reaction
  - c. Acid base reaction
  - d. No oxidation reduction
13. When the drag force on the droplet becomes equal to its real weight the droplet will fall with.
  - a. Maximum acceleration
  - b. Minimum acceleration
  - c. Zero acceleration
  - d. Acceleration due to gravity
14.  $\lim_{n \rightarrow \infty} \left(1 + \frac{1}{n}\right)^n =$ 
  - a. e
  - b.  $\lim_{n \rightarrow \infty} (1 + \frac{1}{n})^n$
  - c. 1
  - d. Both A & B
15. The angular velocity of earth in one rotation (daily) is
  - a.  $\frac{\pi}{2} \text{ rad hr}^{-1}$
  - b.  $\frac{\pi}{6} \text{ rad hr}^{-1}$
  - c.  $\frac{\pi}{3} \text{ rad hr}^{-1}$
  - d.  $\frac{\pi}{12} \text{ rad hr}^{-1}$
16. The asymptotes of the hyperbola  $\frac{x^2}{9} - \frac{y^2}{4} = 1$  are:
  - a.  $y = \pm \frac{2}{3}x$
  - b.  $x = \pm \frac{2}{3}y$
  - c.  $y = \pm x$
  - d. None of the above
17. Transition from  $n = 4$  to  $n = 2$  in a hydrogen atom is called:
  - a. Balmer series
  - b. Lyman series
  - c. Paschen series
  - d. None of the above
18. The Bottom line is that we cannot \_\_\_\_\_ the world.
  - a. most important thing
  - b. most important thing
  - c. most important thing
  - d. most important thing

17. The students will go camping \_\_\_\_\_ the vacations.  
 a. At b. During c. For d. In
18. The heat capacity of a substance at constant volume is directly related to the;  
 a. Enthalpy H b. Enthalpy S c. Internal energy U or E d. Free energy G
19. The vector produce of vector A by itself is:  
 a. 1 b. Zero c. -1 d. Null vector
20. If  $X = \{a, b, c, d\}$ ,  $Y = \{1, 2, 3, 4\}$  and  $g = \{(a, 3), (b, 2), (c, 3)\}$  then g is \_\_\_\_\_ function from x to y.  
 a. 1-1 b. Onto c. Bijective d. None of above
21. Elastic collision involves:  
 a. Loss of energy b. Gain of energy  
 c. No relation between energy & elastic collision d. No gain no loss of energy
22. The dimensions of torque are:  
 a.  $[MLT^{-2}]$  b.  $[ML^2T^2]$  c.  $[MLT^{-1}]$  d.  $[ML^2T^{-2}]$
23. The triangular ratios of  $405 \frac{\pi}{2}$  are the same as that of:  
 a.  $\frac{3\pi}{2}$  b.  $\frac{3\pi}{4}$  c.  $\frac{5\pi}{4}$  d.  $\frac{\pi}{2}$
24. The point at which an applied force produces a linear acceleration but no rotation is:  
 a. Centre of gravity b. Centre of body c. Weight of body d. None of these
25. Which one of the following is the strongest acid?  
 a.  $CH_2ClCH_2-COOH$  b.  $CH_3-COOH$  c.  $CHCl_2-COOH$  d.  $CH_3-CH_2-COOH$
26. Species in search of the positive charge are called;  
 a. Reducing agent b. Nucleophile c. Bases d. Electrophone
27. If a machine does 550 Foot pound work in one second its power will be.  
 a. 550 watt b. 746 watt c. 746 horse power d. 550 horse power
28.  $\lim_{x \rightarrow 0} \frac{\sqrt{1+x}-1}{x} =$  a. 0 b.  $\frac{1}{2}$  c.  $\infty$  d. 2
29. The number of orbitals in 'M' shell of an atom is;  
 a. 1 b. 4 c. 5 d. 9
30. Which of the following type of force can do no work  
 a. Elastic force b. Frictional force c. Gravitational force d. Centripetal force
31. The escape velocity for a ball of mass 0.25 kg will be:  
 a. 44 km sec<sup>-1</sup> b. 11 km sec<sup>-1</sup> c. 2.75 m sec<sup>-1</sup> d. 0.25 m sec<sup>-1</sup>
32. The kth term of the series  $1^2 + (1^2 + 2^2) + (1^2 + 2^2 + 3^2) + \dots$  is:  
 a.  $K^2$  b.  $\frac{k(k+1)(2k+1)}{6}$  c.  $\frac{k^2(k+1)^2}{4}$  d. None of above
33. The librarian can provide you a/an \_\_\_\_\_ edition of the book.  
 a. Abridged b. Summarized c. Abbreviated d. Shortened

34. At what temperature both Fahrenheit and Celsius scales coincide?  
 a.  $40^{\circ}\text{C}$       b.  $-30^{\circ}\text{C}$       c.  $32^{\circ}\text{C}$       d.  $-40^{\circ}$
35. As the pressure of medium increases the speed of sound in medium.  
 a. Increases      b. Decreases      c. Remains constant      d. None of these
36.  $\sum_{j=1}^{\infty} \frac{1}{2^j} =$       a. 1      b.  $\infty$       c.  $\frac{1}{2}$       d.  $\frac{1}{2''}$
37. Which of the following most closely represents an ideal gas?  
 a. He      b.  $\text{H}_2$       c.  $\text{CO}_2$       d. Ne
38. The motion of the source of sound with respect to stationary listener causes a change in:  
 a. Intensity of sound      b. Frequency of sound      c. Velocity of sound      d. None of these
39. Equation of latus rectum of the parabola  $Y^2=4ax$  is:  
 a.  $x=a$       b.  $y=0$       c.  $x+a=0$       d.  $x=0$
40. Which of the following points lie on the circle  $x^2+y^2-13x-5y+16=0$ ?  
 a. (1,1)      b. (3,-1)      c. (0,0)      d. Both A & B
41. BRILLIANT is closest in meaning to:  
 a. Sparkling      b. Glorious      c. Talented      d. Showy
42. During the formation of a chemical bond between two atoms the forces which are operative are:  
 a. both forces of attraction and repulsion      b. either force of attraction nor repulsion  
 c. only force of attraction      d. only force of repulsion
43. If the temperature of the source of heat increases the efficiency of a Carnot's engine:  
 a. Increases      b. Decreases      c. Remains constant      d. None of these
44.  $Y = 2^x$  is the reflection of:  
 a.  $y = \frac{1}{2^x}$       b.  $Y = 2^{-x}$       c.  $Y = 2^x$       d.  $Y = \frac{1}{-2x}$
45. During the hydrolysis of 18g of acidified water hydrogen released at cathode is:  
 a. 18L      b. 22.4L      c. 11.2L      d. 1L
46. At constant temperature if the pressure of the gas is doubled its volume becomes.  
 a. One half      b. Double      c. Four times      d. Remains same
47. The physical quantity which produces angular acceleration in body.  
 a. Force      b. Centripetal force      c. Impulse      d. Torque
48. When dilute  $\text{HNO}_3$  is treated with metals like Cu Ag Pb besides their nitrates which one of the following gases is obtained?  
 a.  $\text{N}_2$       b. NO      c.  $\text{NO}_2$       d.  $\text{N}_2\text{O}$
49. The span of broad jump depends upon:  
 a. mass of jumper      b. Vision of jumper      c. Angle of projection of jumper      d. Height of jumper
50. The acceleration due to gravity on a planet having a mass and radius half of the earth will be equal to:  
 a.  $2g$       b.  $g$       c.  $g/2$       d.  $g/4$
51. First crystalline hormone is:  
 a. Thyroxine      b. Nor adrenalin      c. Adrenalin      d. All of the above
52. Which one has a bond formed by the overlap of an  $\text{SP}^2$  hybrid orbital with a  $\text{SP}$  hybrid orbital?  
 a.  $\text{CH}_3\text{CH}_3$       b.  $\text{CH}_2=\text{CH}_2$       c.  $\text{CH}_2=\text{CH}_2$       d.  $\text{CH}_3\text{C}\equiv\text{CCH}_2\text{CH}_3$
53. One light year is equal to:  
 a.  $9.46 \times 10^9 \text{ km}$       b.  $9.46 \times 10^{15} \text{ m}$       c.  $9.46 \times 10^{15} \text{ cm}$       d.  $9.46 \times 10^{15} \text{ ft}$

54.  $\lim_{x \rightarrow \infty} \left( \frac{2x^2 + 5x + 1}{20x^2 - 1} \right) =$  a.  $\frac{1}{10}$  b.  $\infty$  c. -1 d. 0
55. \_\_\_\_\_ property was damaged by the typhoon  
a. Many b. Much c. More d. Several
56. Evaporation occurs at: a. All b. Low temperature c. High temperature d. Absolute temperature
57. Metallic potassium could not be prepared from a potassium iodide solution by means of a chemical reducing agent because : a. K is a strong reducing b. Metallic k is unstable c. K ion is strong oxidizing d. K is strong oxidant
58. Through which medium the sound waves travel faster?  
a. Oxygen b. Carbon dioxide c. Hydrogen d. Nitrogen
59. -----
60. When  $P_2 = 30$  then  $n =$  a. 5 b. 3 c. 6 d. 0
61. The SI unit of the spring constant  $k$  is identical to:  
a. Energy b. Pressure c. Density d. Surface tension
62. The dimensions of impulse are similar to the dimensions of:  
a. Torque b. Work c. Momentum d. Force
63. If A B C are conformable for multiplication then  $(ABC)^t =$   
a.  $C^t B^t A^t$  b.  $B^t A^t C^t$  c.  $A^t B^t C^t$  d.  $B^t A^t C^t$
64. According to MOT oxygen molecule is paramagnetic due to:  
a. Presence of one unpaired electron b. presence of two unpaired electrons  
c. presence three unpaired electrons d. presence of four unpaired electrons
65. If the scalar product of two non zero vectors A and B is zero then the magnitude of their vector product will be:  
a. AB b. Zero c.  $AB \sin \Phi$  d.  $AB \cos$
66. If the vectors  $ma+nb$  and  $pq+pb$  are parallel then:  
a.  $m = p, n=q$  b.  $m + n = p+q$  c.  $\frac{m}{p} = \frac{n}{p}$  d. None of above
67. We are eager \_\_\_\_\_ the scientist  
a. To meet b. Meet c. To have met d. Meeting
68.  $Ca^{++}$  ions are more hydrate than  $Na^+$  ions because these are:  
a. Larger in size b. Smaller in size c. Divalent positively charged d. Small and divalent positively
69. Three points A B C are said to be collinear if they lie on the same:  
a. Line b. Plane c. Quadrant d. None of above
70. Acid  $HClO_4, H_2SO_4, HCl$  and  $HNO_3$  have nearly equal strength in aqueous medium the phenomenon is called.  
a. Common ion effect b. Leveling effect c. Ionization d. Titration
71. The process in which the structure of the nucleus can be changed by boarding it with high energy particle is called.  
a. Fission reaction b. Fusion reaction c. Nuclear transformation d. All of the above
72. Which one of the following Grignard reactions could give rise to  $CH_3CH_2CH(OH)CH_2CH_3$ ?  
a. propane and methyl grignard b. Butly Grignard and acetaldehyde  
c. Crotonaldehyde and ethyl grignard d. ethyl Grignard and propionaldehyde
73. Radioactive materials can be identified by measuring their:  
a. Density b. Hardness c. Ductility d. Half life
74. The reaction of alkyl halide with ammonia is called.  
a. Wurtz reaction b. Hoffman reaction c. Flanklands reaction d. Friedal craft reaction
75. Time taken by light to reach from sun to earth is:  
a. 10 min 20sec b. 8 min 20sec c. 5 min 20sec d. Infinity



76. The Function  $f: \rightarrow \sqrt{x}$  is called:
- Identity function
  - Linear function
  - Square root function
  - None of above
77. The building was completely \_\_\_\_ by the fire.
- Obliterated
  - Demolished
  - Annihilated
  - Destroyed
78. Positron was discovered by
- Compton
  - Anderson
  - Einstein
  - Dirac
79.  $(5-4i)^{-1}$  can be written in the form of  $x + iy$  as:
- $5/41-4/41i$
  - $5/41+4/41i$
  - $5/9+4/9i$
  - $5/9-4/9i$
80. The rate of reaction is defined as
- $Dc/dt$
  - $Dt/dcc$
  - $dt$
  - $(dc)^2/(dt)^2$
81. The life time of an atom in the meta stable state is:
- $10^{-8}$  sec
  - $10^{-15}$  sec
  - $10^{-3}$  sec
  - $10^{-2}$  sec
82.  $\int \sin kx \, dx =$
- $\sin kx + c$
  - $\cos kx + c$
  - $-\frac{\cos kx + c}{k}$
  - None of above
83. Have you made \_\_\_\_\_ your mind about acting in the play?
- Out
  - Over
  - Up
  - On
84. The oxidation number of nitrogen in the nitrite ion  $\text{NO}_2^-$  is
- +1
  - +2
  - +3
  - +1
85. A precise measurement is one which has:
- Less uncertainty
  - Maximum precision
  - Absolute precision
  - None of these
86. Which of the following is not the binary operation in  $\mathbb{N}$ .
- +
  - $\cdot$
  - \*
  - None of these
87. There are many \_\_\_\_ organization here which need voluntary workers.
- Sympathetic
  - Charitable
  - Generous
  - Sociable
88. Which of the following is not transition element
- Zn
  - Cr
  - Mn
  - Ni
89. Two forces of 12N and 6N are applied simultaneously to a body. The maximum magnitude of their resultant is:
- 24N
  - 30N
  - 18N
  - 36N
90.  $\cos\left(\frac{-2\pi}{3}\right)$  lies in
- 1<sup>st</sup> quadrant
  - 2<sup>nd</sup> quadrant
  - 3<sup>rd</sup> quadrant
  - 4<sup>th</sup> quadrant
91. faisal has made no \_\_\_\_ progress in his studies
- Notice
  - Noticeable
  - Noticeably
  - Noticed
92. A reaction between CO and H<sub>2</sub>O is  $\text{CO(g)} + \text{H}_2\text{O} \rightleftharpoons \text{CO}_2\text{(g)} + \text{H}_2$  the unit of equilibrium for this reaction is:
- Mol/liter
  - Liter/mol
  - Dimensionless
  - Mol/cm<sup>3</sup>
93. The amount of energy required to eject an electron from the metal surface is called:
- Work function
  - Threshold energy
  - Rest mass energy
  - Total energy
94. Urea formation occurs in:
- Kidney
  - Liver
  - Spleen
  - Lungs
95. Which of the following group is considered to have a deactivating effect during aromatic substitution?
- OH
  - NH<sub>2</sub>
  - CH<sub>3</sub>
  - CN
96. If the speed of the moving particle increases the wavelength associated with it will.
- Increase
  - Decrease
  - Not change
  - None of these

97.  $\lim_{m \rightarrow \infty} \left(1 + \frac{1}{m}\right)^{20} =$  a. 0 b.  $\infty$  c. e d. 1
98. Of the four chlorides listed below which does not readily dissociate to form ions in water?  
a. NaCl b. LiCl c. AgCl d.  $\text{CaCl}_2$
99. The nuclei having the same mass number but different atomic number are called:  
a. Isobars b. Isotopes c. Isotones d. Isomers
100.  $\int e^{\sin x} \cos x dx =$  a.  $\sin x e^{\sin x} + c$  b.  $e^{\sin x} + c$  c.  $\cos x e^{\sin x} + c$  d. None of above
101. According to the Bronsted lowry concept which of the following species cannot function as an acid?  
a.  $\text{SO}_4^{2-}$  b.  $\text{H}_3\text{O}^+$  c.  $\text{HSO}_4^-$  d.  $\text{NH}_4^+$
102. The atoms of an element having same atomic number but different mass number are called.  
a. Isotones b. Isotopes c. Isobars d. Isomers
103. The lines represented by  $x^2 + 5xy - y^2 = 0$  are:  
a. Parallel b. Coincident c. Perpendicular d. None of above
104. I can't make \_\_\_\_\_ what he has written  
a. Out b. Up c. After d. For
105. The depletion region has:  
a. Electrons only b. Holes only c. Neither holes nor electrons d. Both holes and electrons
106.  $\frac{d}{dx} a^x =$  a.  $a^x$  b.  $a^x \ln e$  c.  $\frac{ax}{\ln a}$  d.  $a^x \ln a$
107. during the electrolysis of a  $\text{CuCl}_2$  solution which of the following reaction is possible at the anode?  
a.  $2\text{H}_2\text{O} = \text{O}_2 + 4\text{H}^+ + 4e^-$  b.  $\text{Cu}^{++} + 2e^- = \text{Cu}$  c.  $2\text{H}^+ + 2e^- = \text{H}_2$  d.  $\text{Cu} = \text{Cu}^{++} + 2e^-$
108. The velocity of earth satellite can be measured from the change in frequency or radio waves by using.  
a. Doppler effect b. Beats c. Interference d. Diffraction
109. The resistances of 3 ohm 4 ohm and 5 ohm are connected in parallel if the potential difference across 3 ohm resistor be 12 volt then the potential difference across 4 ohm and 5 ohm will be:  
a. 3volt b. 6volt c. 9 volt d. 12 volt
110.  $\frac{d}{dx} \cos x \cdot \sec x =$  a. 1 b. 0 c.  $\sec^2 x$  d. None of above
111. Which of the following compounds when warmed with Fehlings solution gives a red precipitate?  
a. Methanol b. Ethanol c. Aldehyde d. Ketone
112. The combination of NOT and NOR gate is called  
a. XOR gate b. NAND gate c. XNOR gate d. None of above
113. \_\_\_\_\_
114. I am much obliged to you for your \_\_\_\_\_ assistance.  
a. Valuable b. Value c. Valuation d. Valueless
115. Which of the following is responsible for an increase in the entropy of a gaseous system?  
a. Increase in heating b. Cooling the system  
c. Heating followed by cooling d. Compression at specific temperature
116. Which of the following particle can move with the speed of light?  
a. Electron b. Positron c. Proton d. Photon
117. Let  $G = \{-1, 1, -i, i\}$  then  $(G, *)$  is  
a. Group b. Not a group c. A belian group d. None of above
118. Who postulated the following equation for energy emission when an electron drops from state  $n_2$  to  $n_1$ ?  
a. Einstein b. Bohr c. Rutherford d. Heisenberg

119. Which scientist made the following proposal equal volumes of gases under the same conditions of temperature and pressure contain the same number of particles?  
 a. Gay lussac                      b. Curie                      c. Dalton                      d. None of above
120. The emf in a milli Henry inductor in which the current changes from 3A to 1A in a millisecond is:  
 a. 2 volt                      b. 0.2 volt                      c. 20volt                      d. 0.02 volt
121.  $\sin 30^\circ \cdot \cos 60^\circ + \cos 30^\circ \cdot \sin 60^\circ =$  : a. 0                      b.  $\frac{1}{2}$                       c. 1                      d.  $\infty$
122. The young officer was \_\_\_\_\_ because of his excellent performance.  
 a. Raised                      b. Progressed                      c. Improved                      d. Promoted
123. Which of the statements given below is NOT a property of ammonia?  
 a. Is a bronsted base                      b. Has ability to form complex  
 c. May display acidic behaviour                      d. Can't be easily liquefied by cooling or compressing
124. Let A be a matrix of order  $n \times n$  then  $|A| =$   
 a.  $|-A|$                       b.  $|A^{-1}|$                       c.  $|A'|$                       d. None of these
125. The rms value of alternating voltage  
 a. 1.77 volt                      b. 17.7 volt                      c. .707 volt                      d. 0.0177 volt
126. They heard the sirens \_\_\_\_\_ as the fire engines approached:  
 a. To will                      b. Wail                      c. Willed                      d. Willing
127. How much heat is absorbed by 100g of water when its temperature decreases from  $25^\circ\text{C}$  to  $5^\circ\text{C}$ ? (heat capacity is  $4.2\text{J/gK}$ ):  
 a. 84,000j                      b. -2000/4.2j                      c. 2000/4.2j                      d. -84,000j
128. If the sum of the coefficients in the expansion  $(1+x)^n$  is  $2^n$  then the sum of the coefficients in the expansions of  $(1+x)^m$  is:  
 a.  $2^m$                       b.  $m+1$                       c.  $2^{m+n}$                       d.  $2^{n-1}$
129. Let  $OP = a$  and  $OR = b$  then  $PR =$  : a.  $a-b$                       b.  $b-a$                       c.  $A+b$                       d. None of above
130. Which of the following molecules contains six bonding electrons?  
 a.  $\text{NCl}_3$                       b.  $\text{CO}_2$                       c.  $\text{H}_2\text{S}$                       d.  $\text{SF}_6$
131. The motion of the rocket in space is according to law of conservation of:  
 a. Energy                      b. Charge                      c. Mass                      d. Momentum
132. Range of  $f(x)=x^2+1$  is : a. R                      b.  $f(x)>1$                       c.  $f(x)\geq 1$                       d.  $\infty$
133. The log of rate constant of a reaction is:  
 a. directly proportional to temperature change                      b. Not effected by temperature change  
 c. inversely proportional to temperature                      d. effected by activation energy not by temperature
134. A wire of uniform cross section A length L and resistance R is cut into equal pieces The resistivity of each place is:  
 a. Halved                      b. Doubled                      c. One fourth                      d. Remains constant
135. The lines represented by  $x^2+5xy+y^2=0$  are  
 a. Coincident                      b. Perpendicular                      c. Imaginary                      d. None of the above
136. Sarwar \_\_\_\_\_ collect antiques but now he has other pastimes  
 a. Used to                      b. Was used to                      c. Used to be                      d. Using to
137. 10ml of 1.5 M NaOH solution is neutralized by 20ml of a M HCl solution. The value of a will be:  
 a. 1.0                      b. 0.75                      c. 0.5                      d. 0.25
138. The heat energy dissipated by 40 watt Bulb in one hour is  
 a. 1440 joules                      b. 14400 joules                      c. 144000 joules                      d. 1440000 joules
139. In the expansion  $(1+x)^n$  if n is rational then the number of terms are provided  $|x|<1$ :  
 a.  $n+1$                       b.  $n-1$                       c. finite                      d. Infinite
140. The solubility product values for the following salts are given  
 $\text{Cus} = 1.0 \times 10^{-10}$   
 $\text{Hgs} = 1.0 \times 10^{-15}$   
 $\text{Pbs} = 1.0 \times 10^{-20}$   
 a. Hgs will ppt first                      b. Pbs will ppt first                      c. Cus will ppt first                      d. All three will ppt simultaneously

141. The magnetic induction at a distance of 0.1m from a straight wire through which 10A current flow is:  
 a.  $0.2 \times 10^{-5} \text{ T}$       b.  $2 \times 10^{-5} \text{ T}$       c.  $0.02 \times 10^{-5} \text{ T}$       d.  $0.002 \times 10^{-5} \text{ T}$
142. The minimum number of unequal forces whose vector sum can be zero are:  
 a. One      b. Two      c. Three      d. Four
143. Self induction of the coil depends upon:  
 a. Area of coil      b. Number of turns      c. Length of coil      d. All of these factors
144. When coal is heated ( $500-1000^{\circ}\text{C}$ ) in the absence of air the process is called  
 a. Distillation      b. Carbonization      c. Cracking      d. Reforming
145. Which of the following will NOT be deflected when moving in magnetic field?  
 a.  $\alpha$ -rays      b.  $\beta$ -ray      c.  $\gamma$ -ray      d. None
146.  $\frac{d}{dx} \frac{1}{g(x)}$  when  $g(x) \neq 0$  is :      a.  $-g(x)$       b.  $\frac{-g(x)}{[g(x)]^2}$       c. 0      d. None
147. If a circle has its centre on the origin then it passes through  
 a. X axis      b. Y axis      c. Both A and B      d. 0 electrons
148. An orbital may never be occupied by:  
 a. 1 electron      b. 2 electrons      c. 3 electrons      d. 0 electron
149. In which of the following a covalent bond is not likely to exist?  
 a. Br      b.  $\text{SiF}_4$       c. CaO      d.  $\text{CH}_4$
150. Propagation of light in an optical fibre  
 a. the light should be polarized      b. the light should be totally confined  
 c. the light should be dispersed      d. the light should travel along straight line
151.  ${}^nC_r + {}^nC_{r-1} =$       a.  ${}^nC_r$       b.  ${}^nP_r$       c.  ${}^{n+1}C_{r+1}$       d.  ${}^{n+1}C_r$
152. The least accurate of the volumetric measuring devices is the  
 a. Pipet      b. Burret      c. Volumetric flask      d. Graduated cylinder
153. The ability of an instrument to reveal the minor details of an object under examination is its:  
 a. Linear magnification      b. Angular magnification      c. Resolving power      d. None of these
154. Glass is an example of an amorphous solid which can be characterized as:  
 a. A malleable solid      b. A molecular solid      c. Crystal like in structure      d. Very viscous fluid
155. The heating and cooking of food evenly by micro wave oven is an example of:  
 a. Resonance      b. Specific heat      c. Damped oscillation      d. None of these
156.  $\frac{d}{dx} \log_e \sin x =$       a.  $\tan x$       b.  $\text{Cosec } x$       c.  $\cos x$       d.  $\cot x$
157. There is sufficient \_\_\_\_\_ to charge the man with fraud:  
 a. Data      b. Information      c. Evidence      d. Clue
158. What causes a sharp increase in the energy with a further decrease in the distance between atoms A and B after bond formation?  
 a. Attraction of atoms A and B      b. Repulsion of nuclei of A and B and electrons of A and B  
 c. Attraction of nucleus of A and electron of B      d. Bond formation
159. The process of superposing the sound waves on carrier waves is called:  
 a. Rectification      b. Modulation      c. Amplification      d. Transformation
160.  $\sin(\alpha+\beta) - \sin(\alpha-\beta) =$   
 a.  $2 \cos \alpha \sin \beta$       b.  $2 \sin \beta \cos \alpha$       c.  $2 \sin \alpha \sin \beta$       d.  $-2 \sin \alpha \sin \beta$
161. if p1 and p2 are any two points on a coordinate line then  $|p_1 p_2|$  denotes:  
 a. Directed distance      b. Length      c. Undirected distance      d. Both B and C

162. Dry  $\text{CO}_2$  is passed through Grignard reagent in the presence of ether as a solvent the intermediate is decomposed with dil HCL which gives the compound:

- a. Primary alcohol      b. Acetone      c. Carboxylic acid      d. Secondary alcohol

163. In simple AC capacitive circuit.

- a. the current leads the voltage by  $90^\circ$       b. the current and voltage are in phase  
c. the voltage leads the current by  $90^\circ$       d. the current lags from the voltage by  $90^\circ$

164. Product of the roots of the equation:

$$ax^2+bx+c=0, \text{ where } a,b,c \in \mathbb{R} \text{ \& } a \neq 0$$

- a.  $c/a$       b.  $-c/a$       c. Undefined      d. 0

165. Mr. Alif Din is a/an \_\_\_\_\_ figure in the political scandal.

- a. Prominent      b. Outstanding      c. Conspicuous      d. Remarkable

166. Which of the following reacts with hydrogen and nickel to form propane?

- a.  $\text{CH}_3\text{CH}=\text{CH}_2$       b.  $\text{CH}_3\text{CH}_2\text{CH}_2\text{OH}$       c.  $\text{CH}_3\text{CH}=\text{C}(\text{CH}_3)_2$       d.  $\text{CH}_3\text{CH}_2\text{CH}=\text{CH}_2$

167. The reciprocal of bulk modulus is called:

- a. Plasticity      b. Conductivity      c. Compressibility      d. Ductility

168. A natural element y has the electronic configuration  $1s^2 2s^2 2p^6 3s^1$  it will gain or lose electrons to form an ion of valence:

- a. -2      b. +2      c. -1      d. +1

169. Which of the following cannot be polarized?

- a. Sound waves      b. X - rays      c. Radio waves      d. Light waves

170. The transpose of a row matrix is a

- a. Column matrix      b. Row matrix      c. Square matrix      d. None of above

171. The magnifying power of magnifying glass is 6. Its focal length is:

- a. 6 cm      b. 3cm      c. 4cm      d. 5cm

172. The championship games is on this weekend \_\_\_\_\_ I am feeling a little nervous:

- a. since      b. But      c. Although      d. And

173. Quality of fuel is judged from its octane number the best fuels are

- a. straight chain hydrocarbons      b. branched chain hydrocarbons  
c. cyclic compounds      d. aromatic compounds

174. The colour of sky is blue due to:

- a. Interference of light      b. Diffraction of light      c. Polarization of light      d. Scattering of light

175. If  $f(x) = \frac{1}{x}$  and  $g(x) = x^3$  then:      a.  $f \circ g < g \circ f$       b.  $f \circ g \neq g \circ f$       c.  $f \circ g = g \circ f$       d.  $f \circ g > g \circ f$

176. Most people are afraid to go \_\_\_\_\_ the beaten track.

- a. From      b. To      c. off      d. Against

177. Four balloons were filled with different gases. One of the balloons flew the highest the gas filled in it was:

- a. Oxygen      b. Nitrogen      c. Helium      d. Hydrogen

178. During a redox reaction an oxidizing agent:

- a. Gains electrons      b. Is hydrolyzed      c. Is oxidized      d. Loses electrons

179. If A and B are any two complementary events in a sample space s then  $P(A)+P(B)-P(A \cap B) =$

- a.  $P(A \cap B)$       b.  $P(A-B)$       c.  $P(A \cup B)$       d.  $P(A \cup B)$

180. He has \_\_\_\_\_ his pen and is buying another one.

- a. Lose      b. Lost      c. Loser      d. Loss

181. A two meter high tank is full of water a hole is made in the middle of the tank the speed of efflux will be:

- a.  $4.4 \text{ m sec}^{-1}$       b.  $6.2 \text{ m sec}^{-1}$       c.  $5.1 \text{ m sec}^{-1}$       d.  $4.9 \text{ m sec}^{-1}$



182.  $\sin^2 x + \cos^2 x = 1$  is true for:  
 a. One value of  $x$       b. Some values of  $x$       c. No value of  $x$       d. All values of  $x$
183. The potential difference between two points is one volt. The work done in moving one coulomb of charge from one point to other point is:  
 a. One erg      b. One foot pound      c. One electron volt      d. One joule
184. In the fraction  $\frac{4}{(x^2 + 1)(x^4 - 1)}$  total, different real factors in the denominators are:  
 a. 6      b. 3      c. 4      d. 5
185. Which of the following carbonium ion is more stable?  
 a.  $R_3C^+$       b.  $R_2CH^+$       c.  $RCH_2^+$       d.  $CH_3^+$
186. Which of the salts below will produce an alkaline solution when dissolved in water?  
 a.  $Na_2CO_3$       b.  $NaCl$       c.  $NaNO_3$       d.  $Na_2SO_4$
187. The capacitor which charges and discharges quickly will have  
 a. Small value of  $RC$       b. Large value of  $RC$       c. Large value of time constant      d. None of these
188. The inverse of  $y = 2^x$  is:  
 a.  $y = \log_2 x$       b.  $Y = 2 - x$       c.  $Y = -2x$       d. None of above
189. When salt of sodium such as  $NaCl$  is heated in a flame:  
 a. proton will leave the nucleus of  $Na$       b.  $\alpha$  particles will be emitted  
 c. electron will move to higher orbit      d.  $Na$  atoms will react with one another
190. Which of the following elements mixes safely with hydrogen in dark but reacts rather explosively with hydrogen in light?  
 a. Nitrogen      b. Phosphorus      c. Chlorine      d. Potassium
191. Which one is not the unit of magnetic induction?  
 a. Tesla      b. Weber      c. Weber meter<sup>-2</sup>      d.  $Nm^{-1}A^{-1}$
192. The military coup in the county has brought an end to \_\_\_\_\_ rule by the emperor.  
 a. Tyrant      b. democratic rule      c. Eclipse      d. Lasting
193. Which of the following compounds has bonds formed by an overlap of  $sp$  and  $p$  orbitals?  
 a.  $BF_3$       b.  $NH_3$       c.  $BeCl_2$       d.  $CH_4$
194. If an atom exists in the excited state  $n = 4$  then maximum number of spectral lines emitted will be.  
 a. Three      b. Four      c. Five      d. Six
195. \_\_\_\_\_
196. Which of the following reagents may not be used for oxidation of aldehyde and ketones to organic acids?  
 a.  $KMnO_4$       b.  $K_2Cr_2O_7$       c.  $LiAlH_4$       d.  $KOCl$  &  $H_2SO_4$
197. To calculate the momentum of an electron which of the formulas given below would be the most appropriate?  
 a.  $h\nu_2$       b.  $mev$       c.  $h\nu$       d.  $reB$
198. The penetrating power of  $x$  rays depends upon.  
 a. Filament current      b. operating voltage      c. The nature of the filament      d. none of these
199. Let  $R$  be a relation from  $A$  into  $B$  then  
 a.  $Dom R \subseteq A$       b.  $Range R \subseteq A$       c.  $Dom R \subset B$       d.  $Dom R \supset B$
200. What is the right configuration of an element with 24 electrons.  
 a.  $1s^2 2s^2 2p^6 3p^6 3d^6$       b.  $1s^2 2s^2 3s^2 2p^6 3p^6 4s^2 3d^4$       c.  $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^4$       d.  $1s^2 2s^2 2p^6 3s^2 4s^1 3d^5$

X-----X

ENGINEERING ENTRANCE TEST 2011

- Modulus of  $a + ib$  is:  
(a)  $a^2 + b^2$  (b)  $\sqrt{a^2 + b^2}$  (c)  $\sqrt{a^2 - b^2}$  (d)  $a - ib$
- For the given set of ions in alkali metals, the hydration energy \_\_\_\_\_ with increase in ionic size:  
(a) decrease (b) increase  
(c) first decreases and then increases (d) first increases and then decreases
- $9.5 \times 10^{15}$  m when rounded off is  $10^{16}$  m which is equal to:  
(a) tera meter (b) peta meter (c) exa meter (d) light year
- $\lim_{x \rightarrow 0} \frac{\sin x}{x} =$  (a) 0 (b) 1 (c) 2 (d) 6
- The hydrides of Be and Mg are classified as intermediate hydrides. Their behavior is:  
(a) non-volatile and ionic in nature (b) volatile and covalent in nature  
(c) polymeric and covalent in nature (d) crystalline and covalent in nature
- If 7.635 and 4.81 are two significant numbers, their multiplication in significant digits is:  
(a) 36.72435 (b) 36.724 (c) 36.72 (d) 36.7
- $(-1)^{-21} =$  (a)  $-i$  (b)  $i$  (c) 1 (d)  $-1$
- The oxide of chlorine,  $\text{Cl}_2\text{O}_2$  in nature is:  
(a) strongly basic (b) weakly basic (c) strongly acidic (d) weakly acidic
- The horizontal and vertical components of a force are 10N each. The direction of the resultant force with x-axis is:  
(a)  $30^\circ$  (b)  $45^\circ$  (c)  $60^\circ$  (d)  $75^\circ$
- Many people have \_\_\_\_\_ about winning a big prize in the lottery  
(a) imagined (b) visualized (c) fantasized (d) discovered
- If  $\lim_{n \rightarrow \infty} \left(1 + \frac{1}{n}\right)^{2n} =$  (a)  $e^{-1}$  (b)  $e^{\frac{1}{2}}$  (c)  $e^2$  (d)  $e^3$
- Calcium is found in nature as  $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$ . This is commercially called:  
(a) Epsom salt (b) Dolomite (c) Magnesite (d) Gypsum
- If  $\vec{A} = \hat{i} + \hat{k}$  and  $\vec{B} = \hat{i} + \hat{j}$ , Then the angle between  $\vec{A}$  and  $\vec{B}$   
(a)  $60^\circ$  (b)  $75^\circ$  (c)  $45^\circ$  (d)  $30^\circ$
- .....
- Beryllium, an alkaline earth metal resists towards complete oxidation because:  
(a) it is less reactive (b) the oxidation process is slow  
(c) it forms hard protective coat of BeO (d) None of the above
- If  $\vec{A} \cdot \vec{B} = 0$  then  $\vec{A} \times \vec{B}$  will be equal to:  
(a)  $\vec{AB}$  (b) Zero (c)  $\vec{AB} \sin \theta$  (d)  $\vec{AB} \cos \theta$
- If  $\left| \frac{K-2}{5} \right| = 0$  then (a) 0 (b) 3 (c) -3 (d)  $\pm 3$
- Which oxide of sodium metal predominantly forms in oxygen?  
(a)  $\text{Na}_2\text{O}$  (b)  $\text{Na}_2\text{O}_2$  (c)  $\text{Na}_2\text{O}_3$  (d)  $\text{NaO}_2$
- Newton's first law of motion provides:  
(a) 1<sup>st</sup> condition of equilibrium (b) 2<sup>nd</sup> condition of equilibrium  
(c) complete equilibrium (d) rotational equilibrium

20. Most people like the \_\_\_\_\_ of not having to work.  
 (a) scheme (b) suggestion (c) design (d) idea
21. The co-factor of an element  $a_{ij}$  denoted by  $A_{ij}$  is: \_\_\_\_\_  
 (a)  $(-1)^{ij}M_{ij}$  (b)  $(-1)^{i+j}M_{ij}$  (c)  $(-1)^{i-j}M_{ij}$  (d)  $(1)^{i+j}M_{ij}$
22. The phenomenon of inert pair formation in boron family \_\_\_\_\_ down to group.  
 (a) decreases (b) increases  
 (c) first increases and then decreases (d) first decreases and then increases
23. The moment arm of a force of 0.6 N to produce maximum torque of 0.48 N.m is:  
 (a) 2.88m (b) .... (c) 0.8 m (d) 0.288 m
24.  $f(x) = f(0) + x f'(0) + \frac{x^2}{2!} f''(0) + \dots + \frac{x^n}{n!} f^{(n)}(0)$  is called  
 (a) Taylor series (b) binomial series (c) laurent series (d) maclaurin series
25. The compound, Borax is used in borax bead test for detection of cations. The molecular formula of compound is:  
 (a)  $\text{Ca}_2\text{B}_6\text{O}_{11} \cdot 5\text{H}_2\text{O}$  (b)  $\text{H}_3\text{BO}_3$  (c)  $\text{Na}_2\text{B}_4\text{O}_7 \cdot 10\text{H}_2\text{O}$  (d)  $(\text{C}_2\text{H}_5)_3\text{BO}_3$
26. Bodies which fall freely under the action of gravity is an example of:  
 (a) uniform acceleration (b) variable acceleration (c) uniform velocity (d) average acceleration
27. The roots of equation  $25x^2 - 30x + 9 = 0$  are  
 (a) imaginary (b) rational and equal (c) rational and unequal (d) irrational & equal
28.  $[\text{NiCl}_4]^{2-}$  is tetrahedral shaped complex, the bond angle  $\angle \text{Cl} - \text{Ni} - \text{Cl}$  is  
 (a)  $120^\circ$  (b)  $107^\circ$  (c)  $105^\circ$  (d)  $109^\circ$
29. A man throws a ball vertically upward in a compartment of the train which is moving with uniform velocity. The ball will fall:  
 (a) in his hand (b) in front of him (c) behind him (d) beside him
30. When I told him about it, he .....  
 (a) is just laughing (b) has just laughed (c) was just laughing (d) just laughed
31. The minimum value of the function  $f(x) = x^2 - x - 2$  is:  
 (a) -2 (b) .... (c) -1 (d) 0
32. The formula of potassium manganate is  
 (a)  $\text{KMnO}_4$  (b)  $\text{K}_2\text{MnO}_4$  (c)  $\text{K}_3\text{MnO}_4$  (d)  $\text{K}_2\text{MnO}_3$
33. A missile is fired with the speed of  $98\text{ms}^{-1}$  at  $30^\circ$  horizontally. The missile is borne for  
 (a) 20 seconds (b) 25 seconds (c) 10 seconds (d) 5 seconds
34. For what value of  $\lambda$  will the equation  $x^2 - kx + 4$  have sum of roots equal to product of roots:  
 (a) 3 (b) -2 (c) 4 (d) 4
35. Phosphorus acid  $\text{H}_3\text{PO}_3$  is highly soluble in water and behaves as:  
 (a) Monobasic Acid (b) Dibasic acid (c) Tribasic acid (d) None of above
36. The change in momentum of the body is equal to:  
 (a) Force (b) Torque (c) Impulse (d) Pressure
37.  $\int x e^x dx =$  (a)  $x e^x - e^x + c$  (b)  $x e^x + e^x + c$  (c)  $e^x + cx + c$  (d)  $x e^x + c$
38. Nitric oxide acts as / an:  
 (a) oxidizing agent (b) reducing agent  
 (c) both as reducing and oxidizing agent (d) neither oxidizing nor reducing agent
39. The dimension of work are similar to the dimensions of:  
 (a) impulse (b) torque (c) power (d) angular momentum
40. Sabiha's dress fits her like a glove. The underlined phrase means:  
 (a) is too big (b) is too short (c) fits her very well (d) is very comfortable
41.  $\int \frac{dx}{\sqrt{a^2 - x^2}} =$  (a)  $\cos^{-1}\left(\frac{x}{a}\right) + c$  (b)  $\sin^{-1}\left(\frac{a}{x}\right) + c$  (c)  $\sin^{-1}\left(\frac{x}{a}\right) + c$  (d)  $\sin^{-1}x + c$

42. Choose the inter halogen compound  
 (a)  $\text{OF}_2$  (b)  $\text{BrF}_3$  (c)  $\text{HgBr}_2$  (d)  $\text{HI}$
43. The gravitational potential energy per unit mass is called:  
 (a) Gravitational potential (b) Absolute potential energy  
 (c) Potential energy (d) potential hill
44. The length of a quarter of a circle, whose radius is  $r_1$  is:  
 (a)  $4\pi r_1$  (b)  $2\pi r_1$  (c)  $\frac{1}{4}\pi r_1$  (d)  $\frac{1}{2}\pi r_1$
45. In contact process for the manufacture of sulphuric acid, the impurity Arsenic is removed by freshly precipitated ferric hydroxide which absorb Aseneous oxide to form:  
 (a)  $\text{Fe As O}_4$  (b)  $\text{Fe As}_2 \text{O}_4$  (c)  $\text{Fe As}_3 \text{O}_4$  (d)  $\text{FeAsO}_3$
46. If the mass of the body is made three times and the velocity becomes double then the kinetic energy will increase:  
 (a) 6 times (b) 12 times (c) 24 times (d) 18 times
47.  $x^2 + 3 =$   
 (a)  $(x + i\sqrt{3})(x - i\sqrt{3})$  (b)  $(x - i\sqrt{3})(x - i\sqrt{3})$  (c)  $(x + i\sqrt{3})(x + i\sqrt{3})$  (d)  $(ix + \sqrt{3})(ix - \sqrt{3})$
48. Nitric oxide was passed through  $\text{FeSO}_4$  solution a brown compound was formed as formula is:  
 (a)  $\text{FeSO}_4 \text{ NO}$  (b)  $\text{FeSO}_4 (\text{NO})_2$  (c)  $\text{Fe}(\text{SO}_4)_2 \text{ NO}$  (d) None of above
49. A stone is rotated in vertical circle at the end of a string. When the stone is at the top of the circle then the tension in string is:  
 (a) Greater than the weight of stone (b) equal to the weight of the stone  
 (c) Less than the weight of the stone (d) None of the above
50. Many People don't want their dirty linen washed in public The underline phrase means:  
 (a) to have their dirty clothes drying on a clothes line (b) to have their private affairs talked about in public  
 (c) to speak about and criticize something in public (d) to ask the public to help with a noble cause
51. Harmonic means between 3 and 7 is:  
 (a)  $\frac{5}{21}$  (b)  $\frac{21}{5}$  (c) 5 (d)  $\sqrt{21}$
52. Choose the correct name according to IUPAC nomenclature:  
 (a) 2 ethyl-3methyl pentane (b) 3-methyl-cyclo hexane  
 (c) 3-ethyl-2methyl pentane (d) 3-ethyl-4methyl pentane
53. A 60 kg man in a lift which is moving upward with an acceleration of  $4.9\text{ms}^{-2}$  will have apparent weight of:  
 (a) 588 N (b) 294 N (c) 58.8 N (d) 882 N
54.  $\int_0^{\frac{1}{\sqrt{3}}} \frac{dx}{1+x^2} =$  (a)  $\frac{\pi}{2}$  (b)  $\frac{\pi}{4}$  (c)  $\frac{\pi}{3}$  (d)  $\frac{\pi}{6}$
55. Which molecular formula indicates 2-methyl pentane  
 (a)  $\text{C}_5\text{H}_{12}$  (b)  $\text{C}_4\text{H}_{20}$  (c)  $\text{C}_6\text{H}_{14}$  (d)  $\text{C}_6\text{H}_{12}$
56. the orbital velocity of satellite in an orbit around the earth depends upon  
 (a) value of 'g' (b) radius of earth (c) radius of the orbit (d) all of these
57.  ${}^nC_r =$  (a)  $\frac{n!}{(n-r)!r!}$  (b)  $\frac{n!}{(n-r)!}$  (c)  $\frac{n!}{r!}$  (d)  $\frac{(n-1)!+1}{n!}$
58. How many isomers are possible for pentane?  
 (a) 2 (b) 3 (c) 4 (d) 5
59. When the drag force on the object becomes equal to its real weight then the  
 (a) object will become stationary (b) object will fall freely  
 (c) object will fall with terminal velocity (d) object will fall with critical velocity
60. You can't agree with both of them .....  
 (a) make your opinion up (b) make your mind up (c) make brain up (d) make up your mind

61. The ratio in which y-axis divides the line joining point (2, -3) and (-5, 6) is:  
 (a) 2 : 3 (b) 1 : 2 (c) 3 : 5 (d) 2 : 5
62. Methane can be prepared by the reaction of  
 (a) iodomethane with sodium in dry ether (b) methanol with conc  $H_2SO_4$   
 (c) sodium methanoate with soda lime (d) reduction of iodomethane
63. two boats moving parallel fastly, close to each other in the same direction will:  
 (a) attract each other (b) repel each other  
 (c) remain moving in the same direction (d) sink
64. The point of intersection of the medians of a triangle is called:  
 (a) in-center (b) centroid (c) orthocenter (d) circumcenter
65. 2,3 dimethyl, 2 butene undergoes catalytic Hydrogenation to give  
 (a) 2,2 dimethyl butane (b) 2 - methyl pentane  
 (c) 2,3 dimethyl butane (d) 3 - methyl pentane
66. The angular frequency of then mass attached to spring when vibrates with the frequency of 0.6Hz is:  
 (a) 0.6 Hz (b) 3.77 Hz (c) 0.06 rad.sec<sup>-4</sup> (d) 3.77 rad.sec<sup>-4</sup>
67. Two lines  $a_1x + b_1x + c_1 = 0$  and  $a_2x + b_2x + c_2 = 0$  are parallel if:  
 (a)  $\frac{a_1}{a_2} = \frac{b_1}{b_2}$  (b)  $\frac{a_1}{a_2} = -\frac{b_1}{b_2}$  (c)  $\frac{b_1}{c_2} = \frac{b_1}{c_2}$  (d)  $\frac{a_1}{c_1} = \frac{a_2}{c_2}$
68. The combustion of one mole of propane  $C_3H_8$  produces how many moles of water?  
 (a) 2 (b) 3 (c) 4 (d) 5
69. When length of a simple pendulum is increased four times, the frequency of its oscillation will become:  
 (a) one fourth (b) half (c) double (d) four times
70. Don't worry what other people think .....  
 (a) just take not note of them (b) just take no sign of them  
 (c) just take not hint of them (d) just take no notice of them
71. The lines represented by  $ax^2 + 2hxy + by^2 = 0$  are parallel if:  
 (a)  $h^2 - ab = 0$  (b)  $h^2 - ab < 0$  (c)  $h^2 - ab > 0$  (d)  $h^2 + ab = 0$
72. Thermal decomposition of alkanes in the absence of air is called:  
 (a) combustion (b) oxidation (c) cracking (d) hydrogenation
73.  $[MT^{-2}]$  are the dimension of:  
 (a) viscosity (b) intensity (c) pitch (d) surface tension
74. The solution of  $ax + 3y \leq c$  is:  
 (a) closed half plane (b) open half plane (c) circle (d) parabola
75. The dehydrohalogenation of 2-bromobutane with alcoholic potassium hydroxide gives mainly:  
 (a) 2 - butyne (b) 2 - butene (c) 1 - butene (d) 1 - butyne
76. A 3 meter long string resonates in three loops. The frequency of the stationary wave having velocity of 30 m/s mainly:  
 (a) 5 Hz (b) 30 Hz (c) 15 Hz (d) 10 Hz
77. If A and B are not mutually exclusive events then  $P(A \cup B) =$   
 (a)  $P(A) + P(B)$  (b)  $P(A) + P(B) - P(A \cap B)$  (c)  $P(A) + P(B) + P(A \cap B)$  (d)  $P(A) - P(B)$
78. Baeyer's reagent is:  
 (a)  $HCl + ZnCl_2$  (b)  $H_2NNH_2$  (c)  $Br_2$  in  $CCl_4$  (d) Dil k  $MnO_4$
79. Which one of the following properties of light does not change with the nature of medium?  
 (a) frequency of light (b) wavelength of light (c) speed of light (d) all of these
80. I don't like pasta and my sister doesn't .....  
 (a) too (b) neither (c) either (d) also
81. The eccentricity of hyperbola is:  
 (a)  $e < 0$  (b)  $0 < e < 1$  (c)  $e = 1$  (d)  $e > 1$



82. The addition of HX to a double bond the hydrogen goes to the carbon that already has more hydrogen is a statement of:  
 (a) Hund's rule (b) morkownikov's rule (c) Huckel rule (d) None of above
83. The phase change of  $180^\circ$  is equal to path difference:  
 (a) zero (b) half the wavelength (c) double of wavelength (d) quarter wavelength
84. The radius of the circle  $x^2 + y^2 + 2gx + 2fy + c = 0$  is:  
 (a)  $\sqrt{g^2 + f^2 + c}$  (b)  $\sqrt{g^2 - f^2 + c}$  (c)  $\sqrt{g^2 + f^2 - c}$  (d)  $(g + f - c)$
85. Which of the following compounds on hydrolyses gives Ethyne?  
 (a)  $\text{CaC}_2$  (b)  $\text{Mg}_2\text{C}_3$  (c)  $\text{Al}_4\text{C}_3$  (d)  $\text{CuCl}_2$
86. If the width of the slit on the young's double slit experiment becomes double the fringe spacing will become:  
 (a) double (b) one quarter (c) four times (d) half
87. The equation  $ax^2 + by^2 + 2hxy + 2gx + 2fy + c = 0$  represent a circle if:  
 (a)  $a \neq b, h \neq 0$  (b)  $a \neq b, h = 0$  (c)  $a = b, h \neq 0$  (d)  $a = b, h = 0$
88. When acetylene is passed through hot iron tube at  $400^\circ\text{C}$  it gives:  
 (a) Benzene (b) O-xylene (c) Toluene (d) polythene
89. The magnification of a magnifying glass having focal length of 10 cm for an object lying at a distance of 20 cm is:  
 (a) 0.01 (b) 10 (c) 0.1 (d) 1
90. "MISOGYIST" most nearly means A person who:  
 (a) misses his shots (b) hates marriage (c) is against hunting (d) is left out of a sporting team
91. The sum of exponents of a and b in every term of the expansion  $(a + b)^n$  is:  
 (a) n (b) 1 (c) 0 (d) 2n
92. Which of the following compounds comparatively would react rapidly in an  $\text{SN}^2$  reaction?  
 (a)  $(\text{CH}_3)_3\text{Cl}$  (b)  $(\text{CH}_3)_2\text{CHI}$  (c)  $\text{CH}_3\text{CH}_2\text{I}$  (d)  $\text{CH}_2 = \text{CHI}$
93. The ratio of universal gas constant to Avogadro number is equal to:  
 (a) plank's constant (b) boltzman's constant (c) stefan's constant (d) decay constant
94. Second term in the expansion of  $(1 - 2x)^{\frac{1}{3}}$  is:  
 (a)  $\frac{7}{2}$  (b)  $\frac{x}{3}$  (c)  $\frac{2x}{3}$  (d)  $-\frac{2x}{3}$
95. Ethylmagnesium iodide reacts with formaldehyde to give product which one acid hydrolysis forms:  
 (a) an aldehyde (b) a primary alcohol (c) a ketone (d) a secondary alcohol
96. In air at S.T.P the average speed of the  
 (a) nitrogen molecules is greater than oxygen molecules (b) oxygen molecules is less than nitrogen molecules  
 (c) nitrogen molecules is less than oxygen molecules (d) oxygen molecules is equal to nitrogen molecules
97. Expansion of  $(8 - 2x)^{-1}$   
 (a)  $|x| > 4$  (b)  $|x| < 4$  (c)  $|x| = 0$  (d)  $|x| = 4$
98. Lucas reagent is:  
 (a)  $\text{HCl} / \text{NaNO}_2$  (b)  $\text{H}_2 / \text{Pb}$  (c)  $\text{HCl} / \text{ZnCl}_2$  (d)  $\text{HCl} / \text{HNO}_3$
99. The work done against friction will  
 (a) Not change the entropy of system (b) decreases the entropy of system  
 (c) cause to drop the entropy to zero (d) increase the entropy of system.
100. Driving to work,  
 (a) he saw many children going to school (b) the traffic made him lat  
 (c) the traffic jams infuriated him (d) his car broke down many times
101. Cosine of the angle between two non zero vectors a and b is:  
 (a)  $\frac{a \cdot b}{|a||b|}$  (b)  $\frac{|a||b|}{a \cdot b}$  (c)  $\frac{a \times b}{|a||b|}$  (d)  $\underline{a \cdot b}$

102. The compound which reacts most readily with lucas reagent is:  
 (a)  $\text{CH}_3\text{CH}_2\text{Cl}$  (b)  $(\text{CH}_3)_2\text{CHOH}$  (c)  $\text{CH}_3\text{CH}_2\text{OH}$  (d)  $(\text{CH}_3)_3\text{COH}$
103. The coulomb's force between the charges in air is 2.0N the coulomb's force between these charges in insulating medium having  $\epsilon_r = 3.8$  is:  
 (a) 5.26 N (b) 3.8 N (c) 2.0 N (d) 0.53 N
104. If  $\cot \theta > 0$  and  $\sin \theta < 0$  then terminal arc of the angle lies in quadrant:  
 (a) I (b) II (c) III (d) IV
105. Which of the following alcohols will give a yellow ppt of Iodoform with iodine and diluted Na OH solution?  
 (a) 1-Propanol (b) 2-Propanol (c) 1-Butanol (d) 2-Methyl-2-Propanol
106. The rate of change of electric potential with respect to displacement is equal to:  
 (a) Potential gradient (b) electric potential energy (c) electric intensity (d) electric flux
107.  $\hat{j} \cdot (\hat{k} \times \hat{i})$  (a) 1 (b) i (c) j (d) k
108. Which of the following compounds will not be easily oxidized?  
 (a) Primary alcohol (b) secondary alcohol (c) tertiary alcohol (d) aldehyde
109. The correct expression for the energy of the charged capacitor is:  
 (a)  $\frac{1}{2} C^2 V$  (b)  $\frac{1}{2} \frac{Q^2}{C}$  (c)  $\frac{1}{2} \frac{V^2}{C}$  (d)  $\frac{1}{2} C^2 V^2$
110. The president \_\_\_\_\_ on TV tonight  
 (a) speaks (b) will speak (c) has spoken (d) is speaking
111.  $\sin 3\alpha =$   
 (a)  $4 \cos^3 \alpha - 3 \cos \alpha$  (b)  $3 \cos^3 \alpha - 4 \cos \alpha$  (c)  $3 \sin \alpha - 4 \sin^3 \alpha$  (d)  $4 \sin \alpha - 3 \sin^3 \alpha$
112. The acid - catalyzed dehydration mechanism for alcohol is best described as a / an:  
 (a)  $E_1$  (b)  $E_2$  (c)  $S_N^1$  (d)  $S_N^2$
113. The resistance of a conductor having a length of one meter and an area of cross section one square meter is called  
 (a) Conductance (b) resistivity (c) conductivity (d) mho
114.  $\sin\left(\frac{3\pi}{2} - \theta\right) =$   
 (a)  $\sin \theta$  (b)  $\cos \theta$  (c)  $-\sin \theta$  (d)  $-\cos \theta$
115. Ethers are considered as:  
 (a) lewis acids (b) lewis bases (c) both a & b (d) None of these
116. The resistors of  $5\Omega$ ,  $4\Omega$  and  $3\Omega$  are connected in parallel. If the potential difference across  $4\Omega$  resistor is 6 volt, then the potential difference across  $5\Omega$  and  $3\Omega$  will be:  
 (a) 6 volt (b) 3 volt (c) 12 volt (d) 9 volt
117. The period of  $3 \sin \frac{x}{3}$  is  
 (a)  $\pi$  (b)  $2\pi$  (c)  $3\pi$  (d)  $6\pi$
118. Ethanol is isomeric with:  
 (a) ethanal (b) Di-ethyl ether (c) dimethyl ether (d) propanone
119. The circuit in which the terminal voltage of the battery is equal to the emf of the battery is the:  
 (a) open circuit (b) close circuit (c) short circuit (d) electric circuit
120. Running into room,  
 (a) a rug caught her foot and she fell (b) she caught her foot on a rug and she fell  
 (c) her foot was caught on a rug and she fell (d) she had fallen after catching her foot on a rug
121. With usual notation, the value of  $a - b + c$  is:  
 (a)  $s + b$  (b)  $s - b$  (c)  $2s - b$  (d)  $2(s - b)$

122. Which of the following will give a positive test with fehling solution?  
 (a) acetic acid (b) ethyl acetate (c) formaldehyde (d) acetone
123. If the current in parallel conductor be flowing in opposite direction then two conductor will  
 (a) attract each other (b) repel each other (c) neither attract nor repel each other (d) none of these
124. Radius of the described circle opposite to the vertex A is:  
 (a)  $\frac{\Delta}{a}$  (b)  $\frac{\Delta}{s}$  (c)  $\frac{\Delta}{s-a}$  (d)  $\frac{s-a}{\Delta}$
125. Which of the following compound on treatment with  $\text{NaHCO}_3$  will liberate  $\text{CO}_2$  (g)  
 (a) Acetic acid (b) ethyl amine (c) ethyl alcohol (d) phenol
126. The magnetic field due to current in solenoid can be increased by  
 (a) increasing the number of turns (b) using soft iron core  
 (c) increasing the current (d) all of these
127. The domain of the function  $y = \cos^{-1} x$  is:  
 (a)  $0 \leq x \leq 1$  (b)  $-1 \leq x \leq 1$  (c)  $1 \leq x \leq 2$  (d)  $-2 \leq x \leq 2$
128. Acetic acid undergoes reduction with  $\text{LiAlH}_4$  to give:  
 (a) ethanal (b) ethane (c) ethyne (d) ethanol
129. Which of the following particles is not deflected when projected normal to magnetic field  
 (a) proton (b)  $\alpha$ -Particles (c) Photon (d)  $\beta$ -Particles
130. "CEMETERY" most nearly means:  
 (a) graveyard (b) factory (c) system (d) pattern
131. The domain of principal sine function is:  
 (a)  $\left[0, \frac{\pi}{2}\right]$  (b)  $\left[-\frac{\pi}{2}, \frac{\pi}{2}\right]$  (c)  $\left[0, \frac{3\pi}{2}\right]$  (d)  $[0, 2\pi]$
132. Which of the following is ortho-para orienting and ring deactivation?  
 (a)  $-Cl$  (b)  $-NH_2$  (c)  $-OCH_3$  (d)  $-OH$
133. The magnitude of induced e.m.f in the loop depends upon  
 (a) Change of electric flux (b) rate of change electric flux  
 (c) rate of change of magnetic flux (d) change of magnetic flux
134.  $\pi$  in term of numbers is:  
 (a) a symbol (b) an integer (c) a rational number (d) an irrational number
135. Azeotropic mixtures boil at constant temperature they:  
 (a) are non ideal solution (b) are ideal solution  
 (c) obey raoult's law (d) are accompanied by no change in enthalpy
136. The energy used to magnetize and demagnetize the core of transformer causes power loss which is due to  
 (a) winding in coil of transformer (b) Eddy current (c) hysteresis (d) all of these
137.  $\forall a, b \in R$  the property either  $a = b$  or  $a > b$  or  $a < b$  is called:  
 (a) archimedean (b) trichotomy (c) closure (d) transitive
138. Phenol is an ortho-para orienting because the hydroxyl group:  
 (a) increases the electron density at meta position favouring nucleophilic attack  
 (b) increases the electron density at meta position favouring electrophilic attack  
 (c) increases the electron density at O/P positions favouring nucleophilic attack  
 (d) increases the electron density at O/P positions favouring electrophilic attack
139. When the frequency of alternating voltage in capacitive circuit increases the alternating current  
 (a) decreases (b) increases (c) remains the same (d) none of these
140. More than one student \_\_\_\_\_ absent the day before yesterday.  
 (a) was (b) were (c) had been (d) have been
141.  $\omega^{12} + \omega^{56} + \omega^{95} =$   
 (a) 0 (b) 1 (c)  $\omega$  (d)  $-\omega$

142. Compared to benzene nitration of toluene takes place at:  
 (a) the same rate (b) slower rate (c) faster rate (d) a and b both
143. In RLC series circuit when the frequency of AC source is very high then such circuit will be  
 (a) resistive circuit (b) capacitive circuit (c) resonance circuit (d) inductive circuit
144. Magnitude of the vector  $a = (i - j) + (j - i) + (k - j)$  is  
 (a)  $\sqrt{3}$  (b)  $\sqrt{2}$  (c)  $2\sqrt{2}$  (d)  $2\sqrt{3}$
145. How many nucleone are there in an atom of  ${}_{92}^{235}\text{U}$ ?  
 (a) 92 (b) 235 (c) 123 (d) 327
146. The carrier waves on which the low frequency sound waves are super imposed are called  
 (a) micro waves (b) short waves (c) modulated waves (d) medium waves
147. Let  $m_1$  and  $m_2$  be the slopes of the lines  $l_1$  and  $l_2$  respectively  $l_1$  is perpendicular to  $l_2$  if:  
 (a)  $m_1 = m_2$  (b)  $m_1 m_2 = 1$  (c)  $m_1 m_2 = -1$  (d)  $m_1 + m_2 = 0$
148. By which method order of reaction can be determined?  
 (a) differential method (b) ostwald's isolation method (c) graphical method (d) all of the above
149. The applied force at which solids can be determined?  
 (a) strength (b) ductility (c) stiffness (d) toughness
150. Only after my wife asked me the time \_\_\_\_\_ that I had lost my watch.  
 (a) did I realized (b) I realized (c) I did realized (d) I did realize
151. The set  $G = \{1, -1, i, -i\}$  is a group under: -  
 (a) + (addition) (b) - (subtraction) (c)  $\times$  (multiplication) (d)  $\div$  (division)
152. The rate constant (k) for a first order reaction was found to be 0.2 seconds what will be its half life?  
 (a) 10 seconds (b) 5 seconds (c) 2.5 seconds (d) 15 seconds
153. The substance which breaks just the elastic limit is reached is:  
 (a) plastic substance (b) ductile substance (c) ordinary substance (d) brittle substance
154. The compound proposition  $(p \wedge q) \wedge \sim (p \vee q)$  is a  
 (a) tautology (b) sequence (c) quantity (d) self-contradiction
155. Ethanol is manufactured by fermentation of starche. The starch conversion to maltose requires the enzyme  
 (a) zymase (b) invertase (c) diastase (d) all
156. The temperature at which the resistance of conductor approaches to zero is called  
 (a) curie temperature (b) critical temperature (c) absolute temperature (d) normal temperature
157. The multiplicative inverse of a complex number  $\{a, b\}$  is:  
 (a)  $\left(\frac{a}{a^2+b^2}, \frac{-b}{a^2+b^2}\right)$  (b)  $\left(\frac{a}{a^2+b^2}, \frac{-b}{a^2-b^2}\right)$  (c)  $\left(\frac{-a}{a^2+b^2}, \frac{b}{a^2+b^2}\right)$  (d)  $\left(\frac{-a}{a^2+b^2}, \frac{-b}{a^2+b^2}\right)$
158.  $\text{KNO}_3$  exists in two crystalline forms Rhombohedral and orthombic the phenomenon is known as:  
 (a) polymorphism (b) isomorphism (c) allotropy (d) None of these
159. The depletion region contains:  
 (a) electrons (b) holes (c) electrons and holes (d) No holes and no electrons
160. 'Moon' is to 'Satellite' as 'Earth' is to \_\_\_\_\_  
 (a) solar system (b) sun (c) planet (d) asteroid
161. If  $(1+3i)$  is one of the roots of the quadratic equation, than the equation is:  
 (a)  $x^2 - 2x + 10 = 0$  (b)  $x^2 + 2x - 10 = 0$  (c)  $x^2 - 4x + 8 = 0$  (d)  $x^2 - 10 = 0$
162. If an ideal gas is allowed to expand adiabatically the work done by the gas is equal to:  
 (a) the loss of internal energy (b) the loss of entropy (c) the rise in temperature (d) the decrease in pressure
163. The circuit which is built of silicon chip, and ..... of transistor and capacitor is called:  
 (a) rectifier circuit (b) amplifier circuit (c) operational amplifier (d) close circuit
164. If  $n$  is a negative integer or a fraction, then the binomial expansion  $(a+b)^n$  terminates:  
 (a) after  $n$  terms (b) after  $n+1$  terms (c) after  $n+1$  terms (d) Never

165. The vapour pressure of pure acetone is 347 mm Hg. A mixture of 58.0 g acetone and 2.0 g of water is made. According to Raoult's law, what is the partial pressure of the acetone in this mixture?  
 (a) 382 mm Hg (b) 298 mm Hg (c) 242 mm Hg (d) 312 mm Hg
166. The inputs of gate are A and B ; its output is q then  $Q = A + B$  represent the operation of:  
 (a) NAND gate (b) NOR gate (c) XOR gate (d) OR gate
167. Let A and B any two matrices of the same order then  $(A+B)^t =$   
 (a)  $A^t - B^t$  (b)  $A^t + B^t$  (c)  $A + B^t$  (d)  $A^t + B$
168. What energy in joules would a photon of light have at wave length  $3 \times 10^{-3}$  cm ? ( $h = 6.6 \times 10^{-34}$ )  
 (a)  $2.2 \times 10^{-31}$  (b)  $2.64 \times 10^{-36}$  (c)  $6.6 \times 10^{-47}$  (d)  $6.6 \times 10^{-21}$
169. A clock is moving with the relativistic velocity with respect to an observer, this clock with respect to the observer will:  
 (a) run fast (b) run slow (c) run normally (d) stop
170. "Influenza" is to "Virus" as 'Typhoid' is to \_\_\_\_\_  
 (a) bacteria (b) bacillus (c) parasites (d) protozoa
171. In binomial expansion  $(a+b)^n$  pascal's triangle is used to find:  
 (a) in (b) a, b (c) binomial coefficients (d) None
172. The electronic configuration of gallium, atomic number 31 is:  
 (a)  $[Ar]4s^2 3d^{10} 4p^1$  (b)  $[Ar]3s^2 3d^{10} 4p^1$  (c)  $[Kr]3s^2 3d^{10} 4p^1$  (d)  $[Kr]4s^2 3d^{10} 4p^1$
173. The threshold frequency for a metal having work function 6.4 eV is:  
 (a)  $6.4 \times 10^{-19}$  Hz (b)  $6.4 \times 10^{-34}$  Hz (c)  $1.5 \times 10^{15}$  Hz (d)  $1.5 \times 10^{-15}$  Hz
174. The length of  $\ell$  of an arc of a circle in terms of  $r$  and  $\theta$  is:  
 (a)  $\frac{r}{\theta}$  (b)  $r\theta$  (c)  $\frac{\theta}{r}$  (d) None of these
175. Li, Na, K ions in acidified solution can best be separated by:  
 (a) gas chromatography (b) gas liquid chromatography  
 (c) thin layer chromatography (d) ion exchange chromatography
176. The kinetic energy of electron proton alpha particles and neutron is the same. Which one will have the shortest wavelength  
 (a) electrons (b) protons (c) alpha particles (d) neutrons
177. \_\_\_\_\_
178. 0.1000 Mole of NaCl was dissolved in 1.000 dm<sup>3</sup> distilled water at 298K. The concentration of resulting solution is:  
 (a) 5.85 M (b) 1.00 M (c) 0.1000 M (d) <0.1000 M
179. If the transition from higher energy level ends on energy level 3, the series of the spectral lines emitted is called:  
 (a) Balmer's series (b) Lyman's series (c) Paschen's series (d) Brackett's series
180. 'ABORIGINAL' most nearly means:  
 (a) unoriginal (b) native (c) cheap (d) second rate
181. The sum of an infinite G.P is 4 and the sum of the cubes of its terms is 92. The common ratio of the original G.P is:  
 (a)  $\frac{1}{2}$  (b)  $\frac{2}{3}$  (c)  $\frac{1}{3}$  (d)  $-\frac{1}{2}$
182. Moseley demonstrated a direct relationship between the frequency of x-rays emitted by an element bombarded with high energy electrons. On what characteristic of the element does it depend?  
 (a) electronic configuration (b) atomic number (c) degree of ionization (d) atomic mass
183. The intensity of x-rays depends upon  
 (a) filament current (b) nature of material of target (c) operating voltage (d) All of these
184. If  $x > 0$ ,  $xy = 1$  then minimum value of  $x + y$  is:  
 (a) 2 (b) -2 (c) 1 (d) -1



185. Under which condition the change in enthalpy ( $\Delta H$ ) of a system is equal to the heat flow between the system and its surroundings (q)?  
 (a) constant volume (b) at constant pressure (c) constant temperature (d) None of these
186. The excited state which persists for unusually longer period of time is called:  
 (a) ground state (b) ionized state (c) metastable state (d) ordinary excited state
187. If a 4-digit number is formed by using the digit. 1, 2, 3, and 5 with no repetition then the probability that the number is divided by 5 in:  
 (a)  $\frac{1}{2}$  (b)  $\frac{1}{1}$  (c)  $\frac{2}{3}$  (d)  $\frac{1}{4}$
188. Benzene and toluene form nearly ideal solution. The V.P of pure toluene is 22 torr at 20°C for equimolar mixture of benzene and toluene at 20°C the V.P of toluene is:  
 (a) 5.5 torr (b) 11.0 torr (c) 22 torr (d) 1.1 torr
189. The amount of energy required to break the nucleus into constituent nucleons is called:  
 (a) ionization energy (b) exaltation energy (c) binding energy (d) work function
190. There is no dearth of talent in our country. The underlined word means:  
 (a) training (b) shortcoming (c) encouragement (d) shortage
191. Which of the following is not a solution of the equation  $2x + 3y = 24$ ?  
 (a) (9, -2) (b) (0, +8) (c) (12, 0) (d) (6, 4)
192. What will happen if a block of copper is dropped into a beaker containing a solution of 1.0 M of  $\text{ZnSO}_4$ ?  
 (a) The copper will dissolve with no other change  
 (b) The copper will dissolve zinc metal will be deposited  
 (c) The copper will dissolve with the evolution of  $\text{H}_2(\text{g})$  (d) No reaction will occur
193. Radium  ${}_{88}\text{Ra}^{226}$  when disintegrates into  ${}_{86}\text{Rn}^{222}$  causes the emission of:  
 (a)  $\alpha$  - radiation (b)  $\gamma$  - radiation (c)  $\beta$  - radiation (d) cosmic rays
194. In a G.P if  $a_{10} = \ell$ ,  $a_{13} = m$ ,  $a_{16} = n$  then  
 (a)  $\ell n = m^2$  (b)  $\ell n = n^2$  (c)  $mn = \ell^2$  (d)  $mn = \ell$
195. Consider the reaction.  $\text{N}_{2(\text{g})} + 3\text{H}_{2(\text{g})} \rightleftharpoons 2\text{NH}_{3} \quad \Delta H = -45.19 \text{ K mol}^{-1}$   
 (a)  $K(\text{eq})$  increases with increase in temperature (b)  $K(\text{eq})$  decreases with increase in temperature  
 (c)  $K(\text{eq})$  increases with increase in temperature (d)  $K(\text{eq})$  is independence of temperature and pressure
196. The hadrons are  
 (a) protons (b) neutrons (c) mesons (d) all
197.  $\frac{5x+2}{(x+1)(x-2)} = \frac{\quad}{\quad}$   
 (a)  $\frac{1}{x+1} - \frac{4}{x-2}$  (b)  $\frac{2}{x+1} - \frac{3}{x-2}$  (c)  $\frac{5x}{x+1} - \frac{2}{x-2}$  (d)  $\frac{1}{x+1} + \frac{4}{x-2}$
198. A solution is provided which most likely contains carbonate ions. Which of the following would you choose for testing the ions?  
 (a)  $\text{H}_2\text{S}$  (b)  $\text{NaCl}$  (c)  $\text{CaCl}_2$  (d) None
199. The energy stored in 40 mh coil carrying 2 ampere is:  
 (a) 0.1 J (b) 0.8 J (c) 0.08 J (d) 0.01 J
200. Their hospitality is proverbial. The underlined word means  
 (a) sensible (b) well-known (c) exceptional (d) matchless

ENGINEERING ENTRANCE TEST 2012

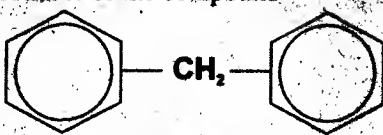
- According to Gay-Lussac's variation of the volume of a sample of gas, at constant pressure a straight line was obtained where slope was found to be equal to:
  - $\frac{V_1}{273}$
  - $\frac{V_0}{273}$
  - $\frac{P_1}{273}$
  - $\frac{P_0}{273}$
- If  $x$  be the height of a person and  $t$  be the time taken for  $x$  then  $\frac{dx}{dt}$  is \_\_\_\_\_
  - velocity
  - acceleration
  - Growth
  - None
- The binding energy for nucleus 'A' is 7.7 MeV and that for nucleus 'D' is 7.8 MeV. Which nucleus has the larger mass?
  - Nucleus A
  - Nucleus B
  - More information is need
  - None
- Which one will show ionic bonding?
  - NaH
  - PbCl<sub>4</sub>
  - HCl (gas)
  - PCl<sub>3</sub>
- The probability of either less than 1 or greater than 6 in rolling die is : \_\_\_\_\_
  - zero
  - 1
  - $\frac{1}{3}$
  - $\frac{1}{4}$
- What is the magnitude of the linear momentum of a particle if its De Broglie's wavelength is 0.02 nm?
  - 0.5 h
  - 50 h
  - $5 \times 10^7$  h
  - $5 \times 10^{18}$  h
- $\lim_{x \rightarrow \infty} \left(1 + \frac{1}{x}\right)^x =$  \_\_\_\_\_
  - x
  - $\frac{1}{x}$
  - e
  - $\infty$
- Choose the correct electronic configuration for Scandium (Z=21):
  - $2s^2 2s^2 2p^6 3s^2 3p^6 3d^1 4s^1$
  - $1s^2 2s^2 2p^6 3s^2 3p^6 3d^1 4s^2$
  - $1s^2 2s^2 2p^5 3s^2 3p^6 3d^1 4s^8$
  - $1s^2 2s^2 2p^5 3s^2 3p^6 4s^2 4p^1$
- An alternating current is represented by the equation  $I = I_0 \sin \omega t$ . Which one of the following equations represent an alternating current that has half the amplitude and double the frequency?
  - $I = 2I_0 \sin \omega t$
  - $2I = I_0 \sin \frac{1}{2} \omega t$
  - $I = \frac{1}{2} I_0 \sin 2 \omega t$
  - $2I = I_0 \sin \omega t$
- As you have not prepared your work \_\_\_\_\_
  - you may not fall in the examination
  - you could prepare harder next time
  - you would do better in the examination
  - you are not likely to do well this time.
- Which one of following electronic sub-shells the lanthanides have in the process of filling?
  - 4f
  - 5f
  - 4d
  - 5d
- If your body mass is 66.26 kg and you are running at the speed of  $10 \text{ ms}^{-1}$  what will be the De Broglie wave length associated with you? ( $h = 6.626 \times 10^{-34} \text{ Js}$ )
  - $10.0 \times 10^{-34} \text{ m}$
  - $10.0 \times 10^{34} \text{ m}$
  - $5.0 \times 10^{34} \text{ m}$
  - $2.0 \times 10^{33} \text{ m}$
- If  $X = \{a, b, c, d\}$   $Y = \{1, 2, 3, 4\}$ . Then which of the following is a bijective function from  $x$  to  $y$ ?
  - $\{(a, 1), (b, 4), (c, 2), (d, 1)\}$
  - $\{(c, 1), (d, 4), (b, 1), (a, 3)\}$
  - $\{(d, 3), (b, 4), (a, 2), (c, 1)\}$
  - $\{(b, 2), (c, 2), (a, 3), (d, 4)\}$

14. Nuclear fission occurs when a:  
 a) light nucleus is split by neutrons  
 b) light nucleus is split by alpha particles  
 c) heavy nucleus is split by alpha heavy particle  
 d) heavy nucleus is split by neutrons
15.  $\frac{d}{dx} \sec hx =$  \_\_\_\_\_  
 (a)  $\tan h x \operatorname{sech} x$  (b)  $-\tanh x \operatorname{sech} x$  (c)  $\cosh x$  (d)  $-\cosh x$
16. Becquerel is the unit of:  
 (a) activity (b) decay constant (c) half life (d) mean life
17. The atoms A and B have the electronic configuration:  $A = 1s^2 2s^2 2p^6 3s^2$   $B = 1s^2 2s^2 2p^4$   
 (a) AB (b)  $A_2 B$  (c)  $AB_2$  (d)  $A_2 B_2$
18.  $\frac{d}{dx} \sinh^{-1} x =$  \_\_\_\_\_  
 (a)  $\frac{1}{\sqrt{1+x^2}}, \forall x \in R$  (b)  $\frac{1}{\sqrt{x^2-1}}, \forall x \in R$  (c)  $\frac{1}{1-x^2}$  (d)  $\frac{1}{1-x^2}$
19. A photon is:  
 (a) a charged particle (b) an electron-positron pair  
 (c) a quantum of electromagnetic radiation (d) neutron
20. There are \_\_\_\_\_ fish in this pond.  
 (a) much (b) any (c) more (d) many
21. Choose the correct statement:  
 (a) crystalline solids are usually anisotropic but liquid crystals are isotropic.  
 (b) crystalline solids are usually isotropic but liquid crystals are anisotropic.  
 (c) liquid crystals have both isotropic and anisotropic properties  
 (d) liquid crystals are devoid of isotropic and anisotropic properties.
22. Straight lines represented by  $ax^2 + 2hxy + by^2 = 0$  are perpendicular if:  
 (a)  $h^2 = ab$  (b)  $ab < h^2$  (c)  $h^2 < ab$  (d)  $a + b = 0$
23. For a non inverting amplifier the gain is given by  
 (a)  $G = 1 + \frac{R_2}{R_1}$  (b)  $G = \frac{1+R_1}{R_2}$  (c)  $G = -\frac{R_1}{R_2}$  (d)  $G = -\left(\frac{R_1}{R_2} + 1\right)$
24. Which is not used as desiccant?  
 (a) Silica gel (b)  $CaCl_2$  (c)  $P_2O_5$  (d) NaCl
25. Two or more vectors are said to be collinear if they are:  
 (a) intersecting the same line (b) parallel to the same line  
 (c) perpendicular to the same line (d) both a. and c.
26. The total energy of a Hydrogen atom in its ground state is:  
 (a) zero (b) positive (c) negative (d) None
27. Atomicity is considered as the:  
 (a) number of atoms present in 1g of a substance. (b) number of atoms present in a molecule  
 (c) number of neutrons present in an atom (d) number of sub-atomic particle present in an atom.

28.  $\int e^{10x} dx =$   
 (a)  $\frac{e^{-10x}}{-10} + c$  (b)  $e^{-10x}$  (c)  $\frac{e^{10x}}{10} + c$  (d)  $\frac{e^{-10x}}{10} + c$
29. Kirchoff's first law is based upon law of conservation of:  
 (a) charge (b) energy (c) mass (d) momentum
30. She does not wash clothes on Friday: Passive form of the sentence is:  
 (a) clothes are not being washed by her on Fridays. (b) clothes are not washed by her on Fridays.  
 (c) Clothes were not washed by her on Fridays. (d) clothes were not being washed by her on Fridays.
31. In the periodic table period represents:  
 (a) The number of electron in the outer most shell  
 (b) The metallic and non metallic characters of the elements  
 (c) The chemical properties of an element (d) The number of the shells in an element
32. The asymptotes of the hyperbola  $\frac{x^2}{a^2} - \frac{y^2}{b^2} = 1$  are  
 (a)  $x = \pm \frac{b}{a} y$  (b)  $y = \pm \frac{a}{b} x$  (c)  $y = \pm \frac{b}{a} x$  (d)  $x = \pm \frac{a}{b} y$
33. Which of the following rays has the longest wavelength?  
 (a) Infrared rays (b) ultraviolet rays (c) Gamma rays (d) x-rays
34. Which one is considered as fool's gold?  
 (a) copper metal (b) iron pyrites  $\text{FeS}_2$  (c) Copper glance  $\text{Cu}_2\text{S}$  (d) None
35.  $\tan^{-1}\left(\frac{5}{6}\right) + \tan^{-1}\left(\frac{1}{11}\right) =$   
 (a)  $\frac{\pi}{2}$  (b)  $\frac{\pi}{4}$  (c)  $\frac{3\pi}{2}$  (d)  $\frac{\pi}{3}$
36. The wavelength of a wave traveling with speed 'v' and having frequency 'f' is  
 (a)  $\lambda = fv$  (b)  $\lambda = vf$  (c)  $\lambda = v/f$  (d)  $\lambda = fv$
37. Common salt is purified by common ion effect by passing HCl Gas through saturated solution of NaCl in water. Why ordinary crystallization process from saturated solution is not recommended?  
 (a) common salt solubility remains constant with increase in temperature (b) common salt is less soluble  
 (c) common salt solubility in water increases with increase in temperature.  
 (d) common salt solubility decreases with increase in temperature.
38. The line  $y = mx + c$ , becomes tangent to the circle  $x^2 + y^2 = a^2$ , If \_\_\_\_\_  
 (a)  $c = \frac{a}{m}$  (b)  $c = \frac{m}{a}$  (c)  $c = \pm \sqrt{a(1+m^2)}$  (d)  $c = \pm \sqrt{1-m^2}$
39. Radioactive activity is affected by:  
 (a) temperature (b) pressure (c) humidity level (d) None
40. Do you go shopping often? Yes, \_\_\_\_\_  
 (a) I go shopping on Mondays (b) I go shopping once a week  
 (c) I go shopping every days (d) I go shopping at Super Market.
41. In an A.P if  $a_1 = 4$ ,  $a_{10} = 22$  Then  $a_{15} = ?$   
 (a) 30 (b) 32 (c) 33 (d) 56

42. Which one of the following is scalar quantity  
(a) Mass (b) acceleration (c) Momentum (d) electric intensity
43. Out of the following which treatment is mostly used to kill the disease causing bacteria and other pathogens in water?  
(a) ozonation (b) UV irradiation (c) chlorination (d) boiling
44. Which of the following is correct  
(a) sum of the cube roots of unity is 0 (b) product of the cube roots of unity is 1  
(c) each complex cube root of unity is reciprocal of the other (d) All of the above
45. A car of mass 1000 kg first travels forwards at  $25\text{m/s}^2$  and then backwards at  $5\text{m/s}^{-1}$ . what is the change in the kinetic energy of the car?  
(a) 200kj (b) 300kj (c) 325kj (d) 450 kj
46. Choose the correct sentence of the following :  
(a) I am much thankful to you. (b) I am quite thankful to you  
(c) I am just thankful to you (d) I am very thankful to you
47. Which of the following reagent will convert acetic acid into acetyl chloride?  
(a) NaCl (b) HCl/ZnCl<sub>2</sub> (c) SOCl<sub>2</sub> (d) Hg
48. The concept of complex numbers as  $a + ib$  was given by  
(a) Gauss (b) Newton (c) Archimedes (d) Leibniz
49. Teflon is prepared by the polymerization of  
(a) butadiene (b) vinyl cyride (c) propylene (d) tetra fluoroethene
50. Which one is the correct formula for finding the speed  $v$  of ocean waves in terms of the density  $\rho$  of seawater, the acceleration of free fall  $g$ , the depth  $h$  of the ocean and the wavelength  $\lambda$  ?  
(a)  $v = \sqrt{g\lambda}$  (b)  $v = \sqrt{\frac{g}{h}}$  (c)  $v = \sqrt{\rho gh}$  (d)  $v = \sqrt{\frac{g}{\rho}}$
51. The power loss  $P$  in resistor is calculated using the formula  $P = V^2/R$ . The uncertainty in the potential difference  $V$  is 3% and the uncertainty in the resistance  $R$  is 2% what is the uncertainty in  $P$ ?  
(a) 4% (b) 7% (c) 8% (d) 11%
52.  $\begin{pmatrix} -1 \\ x \end{pmatrix}^{-1} =$  (a)  $\frac{1}{x}$  (b)  $x$  (c)  $-\frac{1}{x}$  (d)  $-x$
53. Aspirin is produced by heating salicylic acid with:  
(a) Phenol in the presence of Sulphuric acid. (b) Dentoic anhydride in the presence of phosphoric acid  
(c) Methyl alcohol in the presence of sulphuric acid. (d) Acetic anhydride in the presence of sulphuric acid
54. For a given matrix  $A$  , If  $|A| \neq 0$ , Then  $(A^{-1})^t =$   
(a)  $(A^t)^{-1}$  (b)  $(A^{-1})$  (c)  $(A^{-1})^{-1}$  (d)  $(A^t)^{-1}$
55. The measurement of physical quantity may be subject to random errors and to systematic errors. Which statement is correct?  
(a) Random errors are always caused by the person taking the measurement.  
(b) A systematic error cannot be reduced  
(c) Random errors can be reduced by taking the average of several measurements  
(d) A systematic error results in a different reading each time the measurement is taken.



56. Molecular orbitals are generally considered as:  
 (a) localized (b) de-localized (c) normalized (d) None
57. A narrow beam of monochromatic light is incident normally on a diffraction grating. Third order diffracted beams are formed at angles of  $45^\circ$  to the original direction. What is the highest order of diffracted beam produced by this grating?  
 (a)  $3^{\text{rd}}$  (b)  $4^{\text{th}}$  (c)  $5^{\text{th}}$  (d)  $6^{\text{th}}$
58. 'Hue and cry' means a:  
 (a) colorful cooking (b) shouting at the people (c) Noisy public protest (d) Loud confused talking
59. Select the correct name of the compound
- 
- (a) Naphthelene (b) Diphenyl (c) Phenanthrene (d) Diphenyl methane
60. What will be the remainder when  $x^4 + 2x^3 - 2x - 3$ , is divided by  $(x + 2)$ ?  
 (a) -7 (b) -23 (c) -1 (d) None
61. Will you give me your bicycle? Passive form of the sentence is:  
 (a) Will your bicycle be given to me by you? (b) Shall you be given to me by your bicycle?  
 (c) I shall be given your bicycle by you? (d) Your bicycle will be given to me by you?
62. Why does an ideal gas exert pressure on its container?  
 (a) The molecules of the gas collide continually with each other.  
 (b) The molecules of the gas collide in elastically with the walls of the container.  
 (c) The molecules of the gas collide continually with the walls of the container.  
 (d) The weight of the molecules exerts a force on the walls of the container.
63. The most reactive compound among the following is:  
 (a) Nitrobenzene (b) Toluene (c) Benzoic acid (d) Benzene
64.  $|Z_1 + Z_2|$  is: \_\_\_\_\_  
 (a)  $= |Z_1| + |Z_2|$  (b)  $\geq |Z_1| + |Z_2|$  (c)  $= |Z_1||Z_2|$  (d)  $\leq |Z_1| + |Z_2|$
65. On a particular railway track a train driver applies the brakes of the train at a yellow signal, a distance of 1 km from red signal, where it stops. The maximum deceleration of the train is  $0.2 \text{ ms}^{-2}$ . Assuming uniform deceleration what is the maximum safe speed of the train at the yellow signal?  
 (a)  $20 \text{ ms}^{-1}$  (b)  $40 \text{ ms}^{-1}$  (c)  $200 \text{ ms}^{-1}$  (d)  $400 \text{ ms}^{-1}$
66. Considering the addition of hydrogen acids to alkanes, what is the correct order of reactivity?  
 (a)  $\text{HCl} > \text{HBr} > \text{HI}$  (b)  $\text{HI} > \text{HBr} > \text{HCl}$  (c)  $\text{HBr} > \text{HI} > \text{HCl}$  (d)  $\text{HCl} > \text{HI} > \text{HBr}$
67. Consider the solubility of the following sparingly soluble salt in water.  
 $\text{AgCl}_{(s)} \rightleftharpoons \text{Ag}^+_{(aq)} \text{Cl}^-_{(aq)}$   $K_{sp} = K_c [\text{AgCl}] = [\text{Ag}^+] [\text{Cl}^-]$ . The precipitation of AgCl will occur if the product of ionic concentration is:  
 (a) equal to  $K_{sp}$  (b) less than  $K_{sp}$  (c) More than  $K_{sp}$  (d) Both a. & b.
68. Equation of the parabola with vertex at (0,0) and directrix  $y + 2 = 0$  is:  
 (a)  $y^2 = 8x + 8y$  (b)  $x^2 = -8y$  (c)  $y^2 = 8x$  (d)  $x^2 = 8y$

69. In a stationary wave, the distance between a consecutive node and an antinodes is equal to:  
 (a)  $\frac{\lambda}{2}$  (b)  $\frac{3\lambda}{4}$  (c)  $\lambda$  (d)  $\frac{\lambda}{4}$
70. He said to me, "Why have you come late". Indirect form of the sentence is:  
 (a) He asked me why I came late. (b) He asked me why I had come late.  
 (c) He asked me why I have come late. (d) He told me as to why I had come late.
71. Select the oxide which will be acidic in nature:  
 (a)  $P_2O_5$  (b)  $CaO$  (c)  $K_2O$  (d)  $BaO$
72. If  $(x_1, y_1), (x_2, y_2), (x_3, y_3)$  be the vertices of a triangle ABC then the area of the triangular region is \_\_\_\_  
 (a)  $x_1(y_2 - y_3) + x_2(y_3 - y_1) + x_3(y_1 - y_2)$  (b)  $\frac{1}{2} [x_1(y_2 - y_3) + x_2(y_3 - y_1) + x_3(y_1 - y_2)]$   
 (c)  $\frac{1}{2} [x_1(y_2 + y_3) + x_2(y_3 + y_1) + x_3(y_1 + y_2)]$  (d)  $2 [x_1(y_2 - y_3) + x_2(y_3 - y_1) + x_3(y_1 - y_2)]$
73. An alternating current of r.m.s. value 20mA passes through a 4 K $\Omega$  resistor. What is the average power dissipated?  
 (a) 0.8 W (b) 1.6 W (c)  $8 \times 10^3$  W (d)  $1.6 \times 10^3$  W
74. The solution formation of two miscible liquids perfectly obey the Raoult's law if they satisfy the conditions:  
 (a)  $\Delta H = 0, \Delta V = 1$  (b)  $\Delta H = 1, \Delta V = 0$  (c)  $\Delta H = 1, \Delta V = 1$  (d)  $\Delta H = 0, \Delta V = 0$
75. The eccentricity and foci of the ellipse  $16x^2 + 25y^2 = 400$  are:  
 (a)  $-\frac{3}{5}, (0, \pm 3)$  (b)  $-\frac{4}{5}, (0, \pm 4)$  (c)  $\frac{3}{5}, (\pm 3, 0)$  (d)  $\frac{4}{5}, (\pm 4, 0)$
76. Which of the following statement is false about the acetic acid?  
 (a) Acetic acid is stronger acid than formic acid.  
 (b) Acetic acid is weaker acid than formic acid.  
 (c) acetic acid is weaker acid than formic acid.  
 (d) Acetic acid is weaker acid than hydrochloric acid.
77. The  $x + iy$  form of  $(1 - 3i)^{-1}$  is:  
 (a)  $\frac{1}{10} + \frac{3i}{10}$  (b)  $-\frac{1}{10} - \frac{3i}{10}$  (c)  $\frac{1}{3} + \frac{3i}{5}$  (d)  $\frac{3}{10} - \frac{3i}{10}$
78. What is the ratio 1Gm/1 $\mu$ m?  
 (a)  $10^{-3}$  (b) 10 (c)  $10^{-18}$  (d)  $10^{15}$
79. Which metal's presence in fish was responsible for the Minamata disease in Japan?  
 (a) Lead (b) Copper (c) Mercury (d) Cadmium
80.  $\{1, w, w^2\}$  is a group under:  
 (a) Division (+) (b) Multiplication ( ) (c) Subtraction (-) (d) Addition (-+)
81. Which physical quantity would result from a calculation in which a potential difference is multiplied by an electric charge?  
 (a) electric current (b) electric field strength (c) electric power (d) electric energy
82. Metaformaldehyde is a trimer of:  
 (a) ethanol (b) ethanal (c) methanal (d) methanol

83. Order of a matrix A is  $p \times q$ , order of matrix B =  $q \times r$ , Then the order of matrix C =  $A \times B$  will be \_\_\_\_\_  
 (a)  $p \times r$  (b)  $p \times q$  (c)  $q \times r$  (d)  $r \times p$
84. In the expressions below 'a' is acceleration 'F' is force 'm' is mass, 't' is time and 'v' is velocity. Which expression represents energy?  
 (a) Ft (b) Fvt (c) 2mv (d)  $at^2 / 2$
85. Choose the correct sentence out of the following:  
 (a) every one of the two students got a prize. (b) any one of the two students got a prize.  
 (c) each of the two students got a prize. (d) each one of the two students got a prize.
86. The order of chemical reaction can be measure by:  
 (a) Half life method (b) differential method (c) Ostwald method (d) all of these
87. If A and B are mutually exclusive events then:  
 (a)  $P(A \cup B) = P(A) + P(B) - P(A \cap B)$  (b)  $P(A \cup B) = P(A) + P(B)$   
 (c)  $P(A \cup B) = P(A) \cup P(B)$  (d)  $P(A \cup B) = P(A) \cap P(B)$
88. Which of the following series lie in the visible region?  
 (a) Balmer (b) Lyman (c) Paschen (d) Pfund
89. If half life of a certain chemical reaction is denoted by the relationship given bellow:  $t_{1/2} = \frac{1}{Ka}$  Where a is initial concentration what will be the order of the reaction?  
 (a) first order kinetics (b) second order kinetics (c) third order kinetics (d) fractional order kinetics
90.  $\int \frac{1}{x} dx =$  \_\_\_\_\_  
 (a)  $\log.kx + c$  (b)  $\log.x + c$  (c)  $\frac{x^2}{k} + c$  (d) None
91. The binding energy per-nucleon is greater for:  
 (a) lighter nuclei (b) heavy nuclei (c) intermediate nuclei (d) None
92. The standard molar enthalpy of formation is denoted by:  
 (a)  $\Delta H$  (b)  $\Delta H^\circ$  (c)  $\Delta H^\circ_{273}$  (d)  $\Delta H^\circ_{298}$
93. The acute angle formed by two non-perpendicular intersecting lines is given by:  
 (a)  $\tan \theta = \left| \frac{m_2 - m_1}{1 + m_1 m_2} \right|$  (b)  $\tan \theta = \left| \frac{m_1 - m_2}{1 + m_2 m_3} \right|$  (c)  $\tan \theta = \left| \frac{m_1 - m_1}{1 - m_3 m_2} \right|$  (d)  $\tan \theta = \left| \frac{1 + m_2 - m_3}{m_2 m_3} \right|$
94. When a wave comes across an obstacle, it bands ground the obstacle. This phenomenon of bending around of a wave is called:  
 (a) polarization (b) interference (c) reflection (d) diffraction
95. Choose the correct statement about Born Haber cycle:  
 (a) Born Haber cycle is a process for a applying Hess's law to the standard enthalpy changes in the formation of covalent compounds.  
 (b) Born Haber cycle is a process for applying Hess's law to the standard enthalpy changes in the formation of ionic compound.  
 (c) Born Haber cycle is a process for applying Hess's Law to the standard enthalpy changes in the formation of ionic and covalent compounds.  
 (d) None

96.  $\frac{d}{dx}(|x|)$  is: (a)  $\frac{x}{x^2}$  (b)  $\frac{x^x}{x}$  (c)  $\frac{x}{|x|}$  (d)  $\frac{|x|}{x}$
97. Longitudinal waves cannot be:  
(a) Diffracted (b) polarized (c) interfered (d) refracted
98. If we leave this minute \_\_\_\_\_  
(a) I'm sure we'll make it (b) I'm sure we'll take it  
(c) I'm sure we'll get it (d) I'm sure we'll turn it.
99. I insist \_\_\_\_\_ the withdrawal of your statement.  
(a) for (b) at (c) in (d) on
100. The rate law for the reaction  $A \rightarrow C + k$  is given as: Rate =  $K[A]$  the unit of  $K$  will be:  
(a)  $\text{mole}^{-1} \text{dm}^3 \text{s}^{-1}$  (b)  $\text{mole}^1 \text{dm}^{-3} \text{s}^{-1}$  (c)  $\text{s}^{-1}$  (d)  $\text{mole}^{-1} \text{dm}^3$
101. If  $\vec{a}$  and  $\vec{b}$  are non-collinear vectors then  $P\vec{a} + q\vec{b} = 0$  implies:  
(a)  $p \neq 0, q \neq 0$  (b)  $p = q = 0$  (c)  $p \neq 0, q = 0$  (d)  $P = 0, q \neq 0$
102. If the length of a simple pendulum is halved and mass is doubled then its time period.  
(a) increases by  $\sqrt{2}$  (b) remains constant (c) cannot be predicted (d) decreases by  $\sqrt{2}$
103. The maximum kinetic energy of photoelectrons emitted depends upon:  
(a) frequency of incident light (b) intensity of incident light.  
(c) temperature of the metal surface (d) None of the above
104. How many hydrogen atoms are present in one mole of water?  
(a)  $6.02 \times 10^{23}$  atoms (b)  $1.806 \times 10^{24}$  atoms (c)  $1.204 \times 10^{24}$  atoms (d)  $3.01 \times 10^{23}$  atoms
105.  $\lim_{x \rightarrow 0} \frac{x}{\log_a x} =$ :  
(a) 0 (b) 2 (c) 3 (d)  $\infty$
106. A wire loop is placed in a magnetic field. The magnetic flux passing through the loop is minimum when the angle between the field lines and the normal to the surface area of the wire loop is:  
(a)  $0^\circ$  (b)  $45^\circ$  (c)  $90^\circ$  (d)  $270^\circ$
107. 'Be poles apart' means:  
(a) either of the two poles (b) have nothing in common  
(c) leading position in a race (d) affect somebody greatly
108. Choose the correct geometry of the coordination compound  $[\text{Ni}(\text{CN})_4]^{2-}$   
(a) square planer (b) tetrahedral (c) trigonal bipyramidal (d) octahedral
109. Period of  $\frac{1}{2} \tan 3x$  is  
(a)  $\frac{\pi}{6}$  (b)  $\frac{\pi}{3}$  (c)  $\frac{2}{\pi}$  (d)  $\frac{\pi}{7}$
110. The number of electrons in one coulomb of charge is:  
(a)  $6.25 \times 10^{18}$  (b)  $6.25 \times 10^{13}$  (c)  $1.6 \times 10^{18}$  (d)  $9.1 \times 10^{31}$
111. Select an element which exists in liquid state at room temperature.  
(a)  $\text{d}_1$  (b)  $\text{F}_2$  (c)  $\text{Br}_2$  (d)  $\text{I}_2$

112. Which of the following is a conditional equation?  
 (a)  $(x+2)^3 = x^3 + 6x^2 + 12x + 8$  (b)  $(x-5)^2 = x^2 - 10x + 25$   
 (c)  $\sin^2 \theta = 1 - \cos^2 \theta$  (d)  $x - 1 = 5$
113. Which of the following is the most elastic one?  
 (a) rubber (b) wood (c) sponge (d) steel
114. If  $K_c$  of a certain reaction is large it indicates that at equilibrium:  
 (a) The reactants concentration will be high (b) the products concentration will be low  
 (c) the products concentration will be high (d) the reactants and products concentration will be equal
115. Conic is a parabola if: (a)  $e = 1$  (b)  $e = \frac{1}{2}$  (c)  $e = \frac{2}{1}$  (d)  $e = 2$
116. If component of a vector is  $3N$  and  $y$  component is  $3N$  then the angle made by the resultant vector with the  $x$ -axis is: (a)  $45^\circ$  (b)  $315^\circ$  (c)  $135^\circ$  (d)  $225^\circ$
117. A cylindrical wire  $4.0m$  long has a resistance of  $31\Omega$  and is made of metal of resistivity  $1.0 \times 10^{-4} \Omega m$ . What is the radius of cross section of the wire?  
 (a)  $1.0 \times 10^{-4} m$  (b)  $2.0 \times 10^{-21} m$  (c)  $6.4 \times 10^{-8} m$  (d)  $2.0 \times 10^{-4} m$
118. Dilute  $H_2SO_4$  and not  $HNO_3$  is used to prepare  $H_2S$  from  $FeS$  because  
 (a)  $HNO_3$  acts as an oxidizing agent and oxidizes  $H_2S$  to  $SO_2$   
 (b)  $HNO_3$  acid is weaker acid than  $H_2SO_4$  (c)  $H_2SO_4$  is more reactive than  $HNO_3$   
 (d)  $H_2SO_4$  is environmental friendly as compared to  $HNO_3$
119. Period of  $\sin x$  is  
 (a)  $\frac{\pi}{2}$  (b)  $2\pi$  (c)  $\pi$  (d)  $\frac{3\pi}{2}$
120. A total charge of  $100 C$  flows through a  $2W$  light bulb in a time of  $50s$ . What is the potential difference across the bulb during the time?  
 (a)  $0.12 V$  (b)  $2.0 V$  (c)  $6.0 V$  (d)  $24V$
121.  $3Ca(PO_4)_2 \cdot CaF_2$  is the formula of:  
 (a) chlorapatite (b) fluorapatite (c) phosphorite (d) None of these
122. Let  $\vec{a}$  and  $\vec{b}$  be any two vectors and  $\theta$  be the angle between them then  $|\vec{b}| \cos \theta$  is projection of:  
 (a)  $\vec{b}$  in the direction of  $\vec{a}$  (b)  $\vec{a}$  in the direction of  $\vec{b}$   
 (c)  $\vec{b}$  in the direction of  $x$ -axis (d)  $\vec{a}$  in the direction of  $y$ -axis
123. What is the ultimate tensile stress of a material?  
 (a) the stress at which the material becomes ductile (b) the stress at which the material deforms plastically  
 (c) the stress at which the material reaches its elastic limit (d) the stress at which the material breaks
124. 'Frown on somebody' means to:  
 (a) Fall flat upon a stranger (b) Stay alive working hard  
 (c) Disapprove of somebody (d) Unable to be successful
125. Cobalt metal generally forms colored compounds. The color is due to:  
 (a) d.d electronic transition which falls in the visible range  
 (b) p.p electronic transition which falls in the visible range  
 (c) d.v electronic transition which falls in the visible range.  
 (d) d.p electron transition which falls in the visible range.



126. The catalyst used in Friedel-Craft reaction  
 (a) Lewis base (b) Lewis acid (c) amphoteric compounds (d) none of these
127.  $ax^2 + bx + c = 0$  will NOT be a quadratic equation if:  
 (a)  $b \neq 0, c = 0$  (b)  $a \neq 0, b = 0$  (c)  $a = 0$  (d)  $b = 0$
128. The acceleration of free fall on a planet P is  $1/6^{\text{th}}$  of the acceleration of free fall on earth. The mass of a body on planet P is 30kg. what is its weight on planet?  
 (a) 4.9 N (b) 100N (c) 290 N (d) 49N
129. What will happen if a small piece of sodium metal is dropped into ethanol in a test tube?  
 (a) No reaction will take place  
 (b) reaction will take place with the evolution of hydrogen gas.  
 (c) reaction will take place with the evolution of oxygen gas  
 (d) reaction will take place and only sodium ethoxide will be formed with no evolution of any gas.
130. The general term  $T_{r+1}$  in  $(a + b)^n$  is:  
 (a)  $\binom{n}{r} a^{n-r+1} b^r$  (b)  $\binom{n}{r} a^{n-r}$  (c)  $\binom{n}{r} a^{n-r} b^r$  (d)  $\binom{n}{r} a^{n-r+1} b^r$
131. Which is a statement of the principle of conservation of momentum?  
 (a) momentum is the product of mass and velocity (b) momentum is conserved only in elastic collision (c) momentum is conserved by all bodies in a collision  
 (d) momentum is conserved providing no external forces act
132.  $\frac{d}{dx} \cosh x =$   
 (a)  $\sinh x$  (b)  $\sec h x$  (c)  $-\sinh x$  (d)  $\tanh x$
133. A uniform meter rod of mass 50 grams balance at distance of 20 cm from one end. The mass at the other end is:  
 (a) 50 gm (b) 25 gm (c) 75 gm (d) 100 gm
134. If  $\frac{a^{n+1} + b^{n+1}}{a^n + b^n}$  be an A.M between a and b then  $n =$ :  
 (a) -2 (b) 0 (c) 1 (d) -1
135.  $\frac{1}{10}, \frac{1}{14}, \frac{1}{18}, \frac{1}{22}, \dots$  is \_\_\_\_\_  
 (a) Geometric sequence (b) Arithmetic sequence (c) Asymptotic sequence (d) Harmonic sequence
136. Two wires P and Q have resistances  $R_p$  and  $R_q$  respectively. Wire P is twice as long as wire Q and has twice the diameter of wire Q. the wires are made of the same material. What is the ratio  $R_p / R_q$ ?  
 (a) 0.5 (b) 1 (c) 2 (d) 4
137. Dimethyl ether and ethanol is an example of:  
 (a) chain isomerism (b) position isomerism (c) metamerism (d) functional group isomerism
138. If A  $(x_1, y_1)$ , B  $(x_2, y_2)$ , C  $(x_3, y_3)$  are the vertices of a triangle ABC and a, b, c be the lengths of its side then  $\left( \frac{ax_1 + bx_2 + cx_3}{a+b+c}, \frac{ay_1 + by_2 + cy_3}{a+b+c} \right)$  is the:  
 (a) ortho-center (b) centroid (c) In-centre (d) circum-centre

139. How is it possible to distinguish between the isotopes of uranium.  
 (a) their nuclei have different charge and different mass, and they emit different particles when they decay.  
 (b) their nuclei have the same charge but different mass  
 (c) their nuclei have different charge but the same mass  
 (d) Their nuclei have the same charge and mass, but they emit different particle, when they decay.
140. If A, G and H be respectively the A.M., G.M and H.M between a and b, then which of the following relation is correct?  
 (a)  $G^2 = AH$  (b)  $G > A > H$  (c)  $H > A > G$  (d)  $A < G < H$
141. Octane number one hundred is given to compound:  
 (a) 2,2,4-Trimethylpentane (b) n-heptane (c) n-octane (d) iso heptane
142. \_\_\_\_\_
143. They should have arrived by now \_\_\_\_\_ I wonder:  
 (a) what has kept them (b) what has got them (c) what has held them (d) what has done them
144. A student measures a current as 0.5A. Which of the following correctly expresses this result?  
 (a) 50mA (b) 50MA (c) 500MA (d) 500 mA
145. Nylon-6, 6 is obtained from:  
 (a) adipic acid and hexamethylene diame (b) tetrafluoroethylene  
 (c) vinyl cyanide (d) vinyl benzene
146.  $-i^{48} =$   
 (a) i (b) -i (c) -1 (d) 1
147. He said to me, "what a stupid fellow you are". Indirect form of the sentence is:  
 (a) he told me that you were a stupid fellow. (b) He exclaimed that I was a very stupid fellow.  
 (c) he exclaimed that what stupid fellow I was. (d) he did tell me that I had been stupid fellow.
148. Which one of the following is thermosetting polymer?  
 (a) nylon-6, 6 (b) Poly ethylene (c) Bakelite (d) Teflon
149. Factors of  $x^2 + 9$  are:  
 (a)  $(x + 3)(x - 3)$  (b)  $(x + 3i)(x - 3i)$  (c)  $(x - 3)(x - 3)$  (d)  $(x + 3i)(x + 3i)$
150. The quantity x is to be determined from the equation  $x = P - Q$ . P is measured as  $(1.27 \pm 0.02)m$  and Q is measured as  $(0.03 \pm 0.01)m$ . what is the percentage uncertainty in x to one significant figure?  
 (a) 4% (b) 2% (c) 3% (d) 7%
151. Which one of the following polymers contains nitrogen?  
 (a) PVC (b) Teflon (c) Nylon (d) polypropylene
152. Power of the highest derivative appearing in an equation is called its:  
 (a) Degree (b) order (c) power (d) index
153. Which force is caused by a pressure difference:  
 (a) Friction (b) viscous force (c) up thrust (d) weight
154. Acetaldehyde on treatment with Fehling's solution forms red precipitate. The color is due to the formation of:  
 (a) siviler nitrate (b) silver (c) CuO (d)  $Cu_2O$
155. A sequence is a function whose domain is:  
 (a) N (b) R (c) W (d) Q


156. The symbol 'g' represents the acceleration of free fall. Which of these statements is correct?  
 (a) g is gravity (b) g is the ratio weight /mass  
 (c) g is the weight of an object (d) g is reduced by air resistance
157. "His bad friends will ruin him". Passive form of the sentence is:  
 (a) he will ruin his bad friends (b) he is ruined by his bad friend  
 (c) he will be ruined by his bad friends (d) he is being ruined by his bad friends.
158. When formaldehyde is treated with 50% sodium hydroxide solution, it undergoes.  
 (a) cannizzaro's reaction (b) aldol condensation (c) Wurtz reaction (d) hydrolysis
159. If  $a, G_1, G_2, G_3, \dots, G_n$ , b is a G.P then  $G_n =$   
 (a)  $b \left( \frac{a''}{b^{n-1}} \right)^{n+1}$  (b)  $b \left( \frac{a}{b} \right)^{n+1}$  (c)  $\left( \frac{a}{b} \right)^{n+1}$  (d) None
160. Choose the correct order of decreasing basic strength.  
 (a)  $MgO > Na_2O > P_4O_{10} > Al_2O_3$  (b)  $Na_2O > MgO > Al_2O_3 > P_4O_{10}$   
 (c)  $P_4O_{10} > Na_2O > MgO > Al_2O_3$  (d)  $Al_2O_3 > MgO > P_4O_{10} > Na_2O$
161. Select the statement which is NOT true about carbonyl group?  
 (a) The three atoms attached to the carboxyl carbon are not in the same plane.  
 (b) The carbon in carbonyl group is  $sp^2$  hybridized.  
 (c) The bond angles around carbon attached to three atoms are approximately 120.  
 (d) The carbonyl group forms resonating structure.
162. Which statement is NOT true about benzene?  
 (a) Benzene is a planer molecule with bond angles 120° (b) It is completely miscible with water  
 (c) It can be converted into a cyclohexane by hydrogenation  
 (d) It can be converted into ethyl benzene when reacted with ethyl chloride and  $AlCl_3$ .
163. What is plastic deformation?
164.  $ax + \frac{b^2}{a} = c^2$  is:  
 (a) an equation of power 5 (b) a linear equation (c) a cubic equation (d) a quadratic equation
165. What is the relationship between the intensity and the amplitude of a wave?  
 (a)  $\frac{1}{a} = \text{constant}$  (b)  $1u^2 = \text{constant}$  (c)  $\frac{1}{a^2} = \text{constant}$  (d)  $1a = \text{constant}$
166. Select the suitable product when ethylene oxide react with hydrogen bromide:  
 (a) I-Bromethanol (b) Ethyl bromide (c) 2-Bromo ethanol (d) Ethylene glycol
167. Which of the following is correct?  
 (a) Right bisectors of a triangle are concurrent (b) Medians of a triangle are concurrent  
 (c) Altitudes of a triangle are concurrent (d) All of the above
168. The following particles are each accelerated from rest through the same potential difference. Which one completes the acceleration with the greater momentum?  
 (a)  $\alpha$  - particle (b) electron (c) Neutron (d) proton
169. Select the compound that will not be easily oxidized:  
 (a)  $CH_3CH_2OH$  (b)  $(CH_3)_3COH$  (c)  $CH_3OH$  (d)  $(CH_3)_2CHOH$

170. If  $A = \{0\}$  then the number of elements in the power set of  $A =$   
 (a) 0 (b) 1 (c) 2 (d) 3
171. It has been raining continuously \_\_\_\_\_ last night.  
 (a) Since (b) For (c) From (d) With
172. Two heating coils X and Y of resistance  $R_x$  and  $R_y$  respectively deliver the same power when 12V is applied across x and 6V is applied across y. what is the ration of  $R_x/R_y = ?$   
 (a)  $\frac{1}{4}$  (b) 6 (c) 2 (d) 4
173. The acid catalyzed dehydration mechanism of alcohols is best described by:  
 (a)  $SN_1$  (b)  $SN_2$  (c)  $E_1$  (d)  $E_2$
174. Molecular formula of silica is:  
 (a)  $SiO_4$  (b)  $SiO_3$  (c)  $SiO_2$  (d)  $Na_2SiO_3$
175. Let  $V_1$  and  $V_2$  be two vectors, If  $V_2 = \lambda V_1$  where  $\lambda$  is scalar, then  $V_1$  and  $V_2$  are called:  
 (a) equal (b) parallel (c) perpendicular (d) coincident
176. The electric field at a certain distance from an isolated alpha particle is  $3.0 \times 10^7 \text{ N C}^{-1}$ . What is the force on an electron when at that distance from the alpha particle?  
 (a)  $4.8 \times 10^{-12} \text{ N}$  (b)  $2.6 \times 10^{12} \text{ N}$  (c)  $3.0 \times 10^7 \text{ N}$  (d)  $6.0 \times 10^7 \text{ N}$
177. Markownikoff's rule is NOT applicable when HBr is added to:  
 (a) 3-pentene (b) 2-Butene (c) 1-Butene (d) Propene
178. The associated angle of  $\frac{8\pi}{3}$  is:  
 (a)  $\frac{\pi}{3}$  (b)  $\frac{\pi}{4}$  (c)  $\frac{2\pi}{3}$  (d)  $\frac{4\pi}{3}$  (e) None
179. Light of wavelength 700nm is incident on pair of slits forming fringes 3.0mm apart on a screen. What is the fringe spacing when light of wavelength 350 nm is used and the slit separation is doubled?  
 (a) 0.75mm (b) 1.5mm (c) 3.0 mm (d) 6.0 mm
180. He said "May this child live long". Indirect form of the sentence is:  
 (a) He prayed that that child may live long. (b) He prayed that child will live long.  
 (c) He said that that child might live long. (d) He prayed that that child might live long.
181.  $AlCl_3$  generally behaves as:  
 (a) Lewis acid. (b) Bronstead base (c) Bronstead acid (d) Lewis base
182. A coin is flipped thrice. The number of sample points in the sample space is:  
 (a) 3 (b) 6 (c) 8 (d) 9
183. The radius R of the circum-circle is:  
 (a)  $\frac{a}{2 \sin \alpha}$  (b)  $\frac{b}{2 \sin \beta}$  (c)  $\frac{abc}{4\Delta}$  (d) All
84. Several resistor are connected in parallel the resistance of their equivalent resistor will:  
 (a) increases (b) decreases (c) not change (d) None
85. What the required conditions for the following reaction?  $CH_4 + Cl_2 \rightarrow CH_3Cl + CH_2Cl_2 + CHCl_3 + CCl_4 + HCl$   
 (a) Low temperature (b)  $Al_2O_3$  catalyst  $400^\circ C$  (c)  $ZnCl_2$   $250^\circ C$  (d) UV light

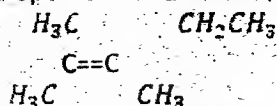
186.  $\frac{\cos 75^\circ + \cos 15^\circ}{\sin 75^\circ - \sin 15^\circ} =$  \_\_\_\_\_  
 (a)  $\sqrt{3}$  (b)  $\frac{\sqrt{3}}{2}$  (c)  $\frac{1}{2}$  (d)  $\frac{1}{\sqrt{2}}$  (e) None
187. A wave incident in a rare medium, when reflected from a denser medium will have a phase change of:  
 (a)  $90^\circ$  (b)  $0^\circ$  (c)  $180^\circ$  (d)  $360^\circ$
188. The conversion of ethyne to acetaldehyde is carried out:  
 (a) Ni  $250^\circ\text{C}$  (b)  $\text{HgSO}_4$   $\text{Fe}_2\text{O}_3$   $80^\circ\text{C}$  (c)  $\text{Al}_2\text{O}_3$   $\text{Fe}_2\text{O}_3$   $150^\circ\text{C}$  (d) Pd,  $70^\circ\text{C}$
189. The apparent weight of a man in an elevator moving up with acceleration 'a' is:  
 (a) mg (b)  $mg - ma$  (c)  $mg + ma$  (d) ma
190. The line  $y = mx + c$  is tangent to the ellipse  $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$ , If \_\_\_\_\_  
 (a)  $c = \pm\sqrt{a^2m^2 + b^2}$  (b)  $c = \pm\sqrt{a^2m^2 - b^2}$  (c)  $c = \pm\sqrt{1 + m^2}$  (d)  $c = \pm\sqrt{a^2 + b^2m^2}$
191. Your friend proved more sympathetic than expected he do.  
 (a) will (b) Shall (c) should (d) would
192. The sum of binomial coefficients in  $(1 + x)^n$  is:  
 (a)  $2^{n+1}$  (b)  $2^n$  (c)  $2^{-n}$  (d)  $2^{n-1}$
193. A projectile is launched at  $45^\circ$  to the horizontal with initial kinetic energy E. Assuming air resistance to be negligible what will be the kinetic energy of the projectile when it reaches its highest point?  
 (a)  $0.71 E$  (b)  $0.50 E$  (c)  $0.87 E$  (d) E
194. What is the approximate mass of nucleus of uranium?  
 (a)  $10^{-13}\text{kg}$  (b)  $10^{-20}\text{kg}$  (c)  $10^{-23}\text{kg}$  (d)  $10^{-30}\text{kg}$
195. Ethene could be obtained from ethyl bromide by:  
 (a) Hydrolysis (b) Nucleophilic substitution (c) Dehydration (d) dehydrohalogenation
196. The quadratic equation whose roots are 3 and 4 is  
 (a)  $x^2 - 7x + 12$  (b)  $x^3 + 7x + 12$  (c)  $x^3 + 12x + 7$  (d)  $x^2 - 12x + 7$
197. Choose the correct sentence out of the following:  
 (a) As far as I know he bears a good moral character  
 (b) As long as I know, he bears a good moral character  
 (c) So far as I know, he bears a good moral character  
 (d) Not that I know, he bears a good moral character
198. Ketones on reaction with methyl magnesium iodide will produce:  
 (a) tertiary alcohol (b) primary alcohol (c) secondary alcohol (d) All of these



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- Do you like this shirt?" he said to his friends. *Select the correct indirect speech:*  
 A) He asked his friends if they liked that shirt.  
 B) He asked his friends if they did liked the shirt.  
 C) He asked his friends if they likened the shirt.  
 D) He asked his friends if they may like the shirt.
- Forces of 3N, 4N and 5N act at one point on an object. The angles at which the forces act can vary. What is the value of the minimum resultant force of these forces?  
 A) 2N                      b. Between 2N and 4N                      c. 0                      d. Between 0 and 2N
- The sum of the squares of two numbers is 100. One number is 2 more than the other. The numbers are:  
 A) 4, 6                      B) 6, 8                      C) 8, 10                      D) 10, 12
- Select the correct product formed when xenon hexafluoride reacts with water:  $\text{XeF}_6 + \text{H}_2\text{O}$   
 A)  $\text{XeO}_2 + \text{HF}$                       B)  $\text{XeE}_4 + \text{HF} + \text{O}_2$                       C)  $\text{Xe} + \text{HF} + \text{O}_2$                       D)  $\text{XeOF}_4 + 2\text{HF}$
- A source of e.m.f. of 9.0 mV has an internal resistance of 6.0  $\Omega$ . It is connected across a galvanometer of resistance 30  $\Omega$ . What will be the current in the galvanometer?  
 A) 250  $\mu\text{A}$                       B) 300  $\mu\text{A}$                       C) 1.5 mA                      D) 2.5 mA
- A groupoid (S, \*) is called a semi group, if '\*' is;  
 A) Commutative in S                      B) Associative in S                      C) Distributive in S                      D) Transitive in S
- Which of the following would you expect to be more soluble in water?  
 A)  $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_3$                       B)  $\text{CH}_3\text{CH}_2\text{OCH}_2\text{CH}_3$                       C)  $\text{CH}_3\text{CH}_2\text{OH}$                       D)  $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_3$
- In the absence of air resistance, a stone is thrown from P and follows a parabolic path in which the highest point reached is T. The stone reaches point Q just before landing.  
  
 The vertical component of acceleration of the stone is:  
 A) Zero at T                      b. Larger at T than at Q                      c. Larger at Q than at T                      d. The same at Q as at T
- $\sin 20^\circ \cos 70^\circ + \cos 20^\circ \sin 70^\circ =$   
 A) 1                      b. -1                      c.  $-\frac{1}{\sqrt{3}}$                       d.  $\frac{2}{\sqrt{3}}$
- Isopropyl alcohol on oxidation with sodium dichromate in presence of sulphuric acid gives:  
 A) Acetaldehyde                      B) Ethanoic acid                      C) Acetone                      D) Propanoic acid
- ALL BYONESELF implies:  
 A) keeping aloof not joining anybody's company                      b. in company and all those present joining hands  
 c. passing one's life singly like a chronic bachelor  
 d. completely alone with no help from someone else
- For any natural number n,  $1 + 3 + 5 + \dots + (2n - 1) =$   
 A)  $\frac{n(n-1)}{2}$                       B)  $\frac{n^2(n-1)^2}{4}$                       C)  $\frac{n(n+1)(n+2)}{2}$                       D)  $n^2$
- The de-Broglie wavelength of a rifle bullet of mass 0.02kg which is moving at a speed of 300  $\text{ms}^{-1}$  is (where  $h = 6.63 \times 10^{-34} \text{ J s}$ ):  
 A)  $7.3 \times 10^{-34} \text{ m}$                       B.  $1.1 \times 10^{-34} \text{ m}$                       C.  $1.8 \times 10^{-34} \text{ m}$                       D.  $9.9 \times 10^{-34} \text{ m}$

14. Select proper IUPAC name of the following compound:



- A) 2-methyl-3-ethyl-2-butene  
B) 3-ethyl-2-methyl-2-butene  
C) 2, 3-Dimethyl-2-pentene  
D) 2, isopropyl butene
15. The electric field between the plates of an isolated air-spaced parallel-plate capacitor is E. What is the field between the plates after immersing the capacitor in a liquid of relative permittivity 10?  
A) 10E  
B) E/10  
C)  $\sqrt{10}E$   
D)  $E/\sqrt{10}$
16. If C and D are two matrices, then  $(C + D)^t$   
A)  $C^t + D^t$   
B)  $C^t D^t$   
C)  $D^t C^t$   
D)  $(CD)^t$
17. Which one of the following best represents the Haber process for the production of ammonia?  
A)  $\text{N}_{2(g)} + 3\text{H}_{2(g)} \rightarrow 2\text{NH}_{3(g)}$   
B)  $\text{Mg}_3\text{N}_2 + 6\text{H}_2\text{O} \rightarrow 3\text{Mg}_{(aq)} + 2\text{NH}_{3(g)}$   
C)  $\text{NH}_4^+ + \text{OH}^- \rightarrow \text{NH}_{3(aq)} + \text{H}_2\text{O}_{(l)}$   
D)  $\text{H}_3\text{N} + \text{NH}_2\text{O} \rightarrow \text{NH}_2 + 1\text{OH} + \text{NH}_3(g)$
18. What is its mean angular speed?  
A)  $1.4 \times 10^{-4} \text{ rad s}^{-1}$   
B)  $1.7 \times 10^{-3} \text{ rad s}^{-1}$   
C)  $5.2 \times 10^{-3} \text{ rad s}^{-1}$   
D)  $3.0 \times 10^{-1} \text{ rad s}^{-1}$
19. If a, b, c are sides of a triangle and  $s = \frac{a+b+c}{2}$  then area of the triangle is:  
A)  $\sqrt{2s(s-a)(s-b)(s-c)}$   
B)  $\sqrt{s(s+a)(s+b)(s+c)}$   
C)  $\sqrt{2s(s+a)(s+b)(s+c)}$   
D)  $\sqrt{s(s-a)(s-b)(s-c)}$
20. The oxidation number of Nitrogen in Nitrite ion is:  
A) +1  
B) +2  
C) +3  
D) +4
21. Traffic constables direct traffic.  
Select the correct passive voice:  
A) Directed by traffic constables is traffic.  
B) By traffic constables is directed traffic.  
C) Traffic by traffic constables is directed.  
D) Traffic is directed by traffic constables.
22. In the Hydrogen spectrum, Balmer series lies in the:  
A) ultra-violet region  
B) visible region  
C) infra-red region  
D) X-rays region
23. If a, b, c  $\in \mathbb{R}$   $a > b$ ,  $b > c > a > c$ , then this property is called:  
A) Multiplicative property of inequality  
B) Transitive property of inequality  
C) Additive property of inequality  
D) Trichotomy property of inequality
24.  $\text{CH}_3$   
 $\text{CH}-\text{CH}_2\text{CH}_3 + \text{Mg} \quad \text{X} \quad \text{Y}$   
 $\text{CH}_3 \quad \text{Br}$   
In the above reaction Compound Y will be an: A) Alkane B) Alkene C) Alcohol D) Alkyl halide
25. The phase change of  $180^\circ$  is equivalent to a path difference of:  
A)  $\lambda/2$   
B)  $\lambda$   
C)  $2\lambda$   
D)
26. The domain of principal sine function is:  
A)  $\left[0, \frac{\pi}{2}\right]$   
B)  $\left[-\frac{\pi}{2}, \frac{\pi}{2}\right]$   
C)  $\left[0, \frac{3\pi}{4}\right]$   
D)  $[0, 2\pi]$
27. What will happen if a block of copper metal is dropped into a beaker containing a solution of 1M  $\text{FeSO}_4$ ?  
 $\text{Cu}^{2+} + 2e \rightarrow \text{Cu} \quad 0.34 \text{ V}$   
 $\text{Fe}^{2+} + 2e \rightarrow \text{Fe} \quad -0.44 \text{ V}$   
A) The copper will dissolve with no other change  
b) The copper will dissolve and Fe will be precipitated out  
B) The copper will dissolve with the evolution of  $\text{H}_2$  gas  
d. No reaction will occur

28. What are the base SI units of force?  
 A)  $\text{Kg m s}^0$  B)  $\text{Kg m s}^1$  C)  $\text{Kg m s}^2$  D)  $\text{Kg m s}$
29.  $\tan \frac{\theta}{2} =$  A)  $\pm \frac{1 - \cos \theta}{1 + \cos \theta}$  B)  $\pm \frac{1 + \cos \theta}{1 - \cos \theta}$  C)  $\frac{1 - \cos \theta}{1 + \cos \theta}$  D)  $\frac{1 + \cos \theta}{1 - \cos \theta}$
30. The best known fuel cell and the most highly developed is the hydrogen/oxygen fuel cell known as the:  
 A) Proton ceramic cell B) Molten carbonate fuel cell  
 C) Bacon cell D) Direct methanol fuel cell
31. 'INNUMERABLE' means:  
 A) In equal numbers B) Numerically scant  
 C) Not in a formation D) Too many to count
32. A body of mass  $m$ , moving at velocity  $v$ , collides with a stationary body of the same mass and sticks to it. Which row describes the momentum and kinetic energy of the two bodies after the collision?
- |    | Momentum | Kinetic energy    |
|----|----------|-------------------|
| A) | $mv$     | $\frac{1}{4}mv^2$ |
| B) | $mv$     | $\frac{1}{8}mv^2$ |
| C) | $2mv$    | $\frac{1}{2}mv^2$ |
| D) | $2mv$    | $mv^2$            |
33. If a system of linear equations has no solution, it is called:  
 A) Invertible B) Indeterminate C) Consistent D) Inconsistent
34. An organic compound having molecular formula  $\text{C}_2\text{H}_6\text{O}$  can exhibit functional group isomerism. Select the correct isomers:  
 A) Methanol and methoxy methane B) Ethanol and ethoxy ethane  
 C) Ethanol and methoxy methane D) Methanol and ethoxy ethane
35. Which of the following pairs contains one vector and one scalar quantity?  
 A) Displacement : acceleration B) Force : kinetic energy  
 C) Momentum : velocity D) Power : speed
36. The period of  $\sin x$  is: A)  $2\pi$  B)  $-2\pi$  C)  $\pi$  D)  $-\pi$
37. Those substances which are attracted in a magnetic field are called:  
 A) Ferrimagnetic substances B) Diamagnetic substance  
 C) Antiferromagnetic substances D) Paramagnetic substances
38. If a force of 10N makes an angle of  $60^\circ$  with y-axis, its x-component is:  
 A) 0.776N B) 8.66N C) 7.76N D) 5.0N
39. If A and B are any two events defined in a sample space, then  $P(A - B) =$   
 A)  $P(A) - P(A \cup B)$  B)  $P(A \cup B) - P(A)$  C)  $P(A) - P(A \cap B)$  D)  $P(A \cap B)$
40. Which type of hybridization carbon atom can undergo in the formation of ethyne molecule?  
 A)  $\text{Sp}$  B)  $\text{Sp}^2$  C)  $\text{Sp}^3$  D)  $\text{Dsp}^2$
41. Select the correct sentence:  
 A) Last night we watched a barbaric movie. B) Last night we watched a turmeric movie.  
 C) Last night we watched a agnostic movie. D) Last night we watched a fantastic movie.
42. Which statement is not valid?  
 A) Current is the speed of the charged particles that carry it  
 B) Electromotive force (e.m.f.) is the energy converted to electrical energy from other forms, per unit charge  
 C) The potential difference (p.d.) between two points is the work done in moving unit charge from one point to the other  
 D) The resistance between two points is the p.d. between the two points, per unit current

43.  ${}^nP_r =$  A)  $\frac{n(n-1)!}{n-r}$  B)  $\frac{n!(n-1)!}{n-r}$  C)  $\frac{n!}{(n-r)!}$  D)  $\frac{n!(n-1)!}{n-r}$
44. Methanol reacts with sodium. The product formed is sodium methoxide and hydrogen gas:  
 $2\text{CH}_3\text{OH} + 2\text{Na} \rightarrow \text{CH}_3\text{O Na} + \text{Na} + \text{H}_2 (\text{g})$ . In this reaction methanol acts as:  
 A) Weak base B) Weak acid C) Strong base D) Weak oxidizing agent
45. In the direction indicated by an electric field line:  
 A) The potential must decrease B) The electric field strength must increase  
 C) The electric field strength must decrease D) The potential must increase
46. In the form of partial fractions the rational function  $\frac{x^2}{(x-1)^2(x+1)}$  can be written as:  
 A)  $\frac{A}{x-1} + \frac{B}{(x-1)^2}$  B)  $\frac{A}{(x-1)^2} + \frac{Bx+C}{x+1}$   
 C)  $\frac{A}{x-1} + \frac{B}{(x-1)^2} + \frac{B}{(x-1)^2} + \frac{Dx+E}{x+1}$  D)  $\frac{A}{x-1} + \frac{B}{(x-1)^2} + \frac{B}{(x-1)^2} + \frac{D}{x+1}$
47.  $\text{CH}_3\text{COCl} + 2\text{NH}_3 \rightarrow$   
 Considering the above reaction which one is the true product?  
 A)  $\text{CH}_3\text{COO NH}_4$  B)  $\text{CH}_3\text{CO NH}_2$  C)  $\text{H}_2\text{N COO NH}_4$  D)  $\text{CH}_3\text{Cl}$
48. In a photoemission experiment, the wavelength of the light incident on the target material is increased. What is the effect of this change of wavelength on the kinetic energy of the photoelectrons produced?  
 A) The average kinetic energy increases A. The maximum kinetic energy increase  
 C. The average kinetic energy decreases B. The minimum kinetic energy increases
49. A circle passing through the vertices of any triangle is called:  
 A) Semi circle B) Circumcircle C) Incircle D) Escribed circle
50. The impurities in water are expressed by unit, parts per million (PPm) which is equal to:  
 A)  $\frac{\text{wt or volume of solute}}{\text{wt or volume of solution}} \times 10^6$  B.  $\frac{\text{wt or volume of solution}}{\text{wt or volume of solute}} \times 10^6$   
 C.  $\frac{\text{wt or volume of solute}}{\text{wt or volume of solvent}} \times 10^6$  D.  $\frac{\text{wt or volume of solvent}}{\text{wt or volume of solute}} \times 10^6$
51. Marvin was arrested and charged ..... murder.  
 A) Into B) Over C) With D) Near
52. What is the internal energy of an object?  
 A) It is the energy associated with the object's movement through space  
 B) It is the energy associated with the random movement of the molecules in the object  
 C) It is the energy due to the attractions between the molecules in the object  
 D) It is the sum of all the microscopic potential and kinetic energies of the molecules in the object
53. If A and B are two sets, then  $A' \cup B' =$   
 A)  $(A \cup B)'$  B)  $(A \cap B)'$  C)  $A' \cap B'$  D)  $(B \cup A)'$
54. The reduction of 2-butyne to n-butane in laboratory involves:  
 A) The use of an oxidizing agent such as  $\text{Cr}_2\text{O}_7^{2-}$  in the presence of acids.  
 B) The use of strong base such as KOH along with  $\text{NaNH}_2$   
 C) The use of hydrogen gas in the presence of Nickel as catalyst  
 D) The use of  $\text{Al}_2\text{O}_3$  as catalyst and water in the form of steam
55. Which of the following physical phenomena cannot be described only by the wave theory of the electromagnetic radiation?  
 A) Diffraction B) Interference C) Polarization D) Photoelectric effect
56. If A is a non-singular matrix, then  $A^{-1}$   
 A)  $\frac{1}{|A|} \text{adj } A$  B)  $A^{-1} \text{adj } A$  C)  $\frac{1}{A^{-1}} \text{adj } A$  D)  $\frac{|A|}{\text{adj } A}$

57. Acetic acid reacts with thionyl chloride. The product obtained is:  
 A)  $\text{CH}_3\text{COCl} + \text{SO}_2 + \text{HCl}$  B)  $\text{CH}_3\text{Cl} + \text{CH}_3\text{COCl} + \text{SO}_2$   
 C)  $\text{CH}_3\text{COCH}_3 + \text{SO}_2$  D) None of the above
58. Which statement about nuclei is correct?  
 A) Different isotopic nuclei have different proton numbers  
 B) Nucleon numbers of nuclei are unchanged by the emission of  $\beta$  particles  
 C) For some nuclei, the nucleon number can be less than the proton number  
 D) In some nuclear processes, mass-energy is not conserved
59. Let  $Z$  be the set of all integers and " $\circ$ " is defined as  $a \circ b = 3a - b$ ,  $a, b \in Z$ , then " $\circ$ " is not:  
 A) Commutative B) Associative C) Distributive D) All of the above
60. Which of the following is not an electrophile?  
 A)  $\text{H}_3\text{O}^+$  B)  $\text{AlCl}_3$  C)  $\text{CN}^-$  D)  $\text{BF}_3$
61. 'CHUCKLE' means:  
 A) Bouquet of flowers B) Displeasing manner C) Suppressed laughter D) Religious movement
62. A wire of resistance  $3.0\Omega$  is stretched to twice its original length. The resistance of new wire will be:  
 A)  $1.5\Omega$  B)  $3.0\Omega$  C)  $6.0\Omega$  D)  $12.0\Omega$
63. The distance  $d$  from the point  $P(x_1, y_1)$  to the line  $ax + by + c = 0$  is given by  $d =$   
 A)  $\frac{|ax_1 - by_1 + c|}{\sqrt{a^2 + b^2}}$  B)  $\frac{|ax_1 + by_1 - c|}{\sqrt{a^2 + b^2}}$  C)  $\frac{|ax + by + c|}{\sqrt{a^2 + b^2}}$  D)  $\frac{|ax_1 + by_1 + c|}{\sqrt{a^2 + b^2}}$
64. Which mixture can be separated by filtration?  
 A) Sand and water B) Petrol and water C) Salt and sugar D)  $\text{NaCl}$  and water
65. In vacuum all electromagnetic waves have the same:  
 A) speed B) energy C) Frequency D) wavelength
66.  $\int \sec^2 10x dx =$  A)  $\frac{\cos^2 10x}{10} + C$  B)  $\frac{\tan 10x}{10} + C$  C)  $\frac{\sec 10x}{10} + C$  D)  $\frac{\cos 10x \csc 10x}{10} + C$
67. The hydrolysis of urea into ammonia and  $\text{CO}_2$  takes place in the presence of a catalyst Urease as shown below  
 A) Homogenous catalysis B) Heterogeneous catalysis  
 C) Enzyme catalysis D) None of the above
68. The density of a steel ball was determined by measuring its mass and diameter. The mass was measured within 1% and the diameter within 3%. The error in the calculated density of the  
 A) 2% B) 4% C) 8% D) 10%
69. In quadratic equation  $ax^2 + bx + c = 0$ , product of the roots is:  
 A)  $\frac{b}{a}$  B)  $-\frac{c}{a}$  C)  $\frac{c}{a}$  D)  $-\frac{b}{a}$
70. Concentrated sulphuric acid is added to a mixture of potassium dichromate and metal chloride in solid state. On heating brown fumes of chromyl chloride are formed. Its formula is:  
 A)  $\text{CrOCl}_2$  B)  $\text{CrO}_2\text{Cl}_2$  C)  $\text{CrO}_2\text{Cl}$  D)  $\text{CrOCl}_3$
71. Select the correct sentence:  
 A) She possesses some small charming silver ornaments.  
 B) Some charming small silver ornaments she possesses.  
 C) Some small silver charming ornaments she possesses.  
 D) She possesses some charming small silver ornaments.
72. The minimum number of equal forces that keep the body in equilibrium are:  
 A) Two B) Three C) Four D) Five
73. If  ${}^nC_6 = {}^nC_{12}$ , then  $n =$   
 A) 6 B) 18 C) 12 D) 4



74. Fewer the number of carbon atoms in an alkane the lower will be the boiling point and will be:  
 A) Basic B) Non volatile C) Volatile D) Acidic
75. Two parallel plates, a distance 25 mm apart, have a potential difference between them of 12 kV. What is the force on an electron when it is in the uniform electric field between the plates?  
 A)  $40.8 \times 10^{-20}$  N B)  $7.7 \times 10^{-20}$  N C)  $4.8 \times 10^{-17}$  N D)  $7.7 \times 10^{-14}$  N
76. In the quadratic equation  $ax^2 + bx + c = 0$  if  $a = 0$ , then it:  
 A) Becomes a linear equation B) Becomes a polynomial  
 C) Becomes an exponential equation D) Remains Quadratic equation
77. Formaldehyde is used in the manufacture of:  
 A) Pararosaniline B) Acetic anhydride C) 1,3-Butadiene D) Smokeless powder
78. A body in equilibrium must not have:  
 A) Kinetic energy B) Velocity C) Momentum D) Acceleration
79.  $(\sec B - 1)(\sec B + 1) =$   
 A)  $\cot^2 \theta$  B)  $\sec^2 \theta$  C)  $\tan^2 \theta$  D)  $\operatorname{cosec}^2 \theta$
80. Which of the following is not true for enzymes?  
 A) They are complex protein molecules B) Their efficiency is independent of temperature  
 C) They work under specific range of pH D) Their action is specific
81. "You really took good care of your sister," I said. Select the correct indirect speech:  
 A) I said that he had really taken good care of his sister.  
 B) I said that he had really cared good for his' sister.  
 C) I said that he really had taken good care of his sister.  
 D) I said that he had really good care taken of his sister.
82. The magnitude of horizontal component of a force 10N is 6N. The magnitude of its vertical component is:  
 A) 10N B) 8N C) 4N D) 12N
83. The numbers which have  $\sqrt{-1}$  as one factor are called:  
 A) Real numbers B) Complex numbers C) Irrational numbers D) Imaginary numbers
84. During the electrolysis of  $\text{CuCl}_2$  solution which reaction is possible at the anode?  
 A)  $\text{Cu}_{(s)} \rightarrow \text{Cu}^{+2}_{(aq)} + 2e$  B)  $2\text{H}^+ + 2e \rightarrow \text{H}_{2(g)}$   
 C)  $2\text{H}_2\text{O}_{(l)} \rightarrow \text{O}_{2(g)} + 4\text{H}^+_{(aq)} + 4e$  D)  $\text{Cu}^{+2}_{(aq)} + 2e \rightarrow \text{Cu}_{(s)}$
85. Forces of 4N and 6N act at a point. Which one of the following could not be the magnitude of their resultant?  
 A) 10N B) 6N C) 4N D) 1N
86. If A is a square matrix of order  $3 \times 3$ , then  $AA^t$  is:  
 A) Symmetric B) Skew-symmetric C) Triangular D) None of the above
87. Polyamides are class of condensation polymers by a chemical reaction between:  
 A) Monocarboxylic acid and diamines B) Dicarboxylic acids and diamines  
 C) Dicarboxylic acids and simple amines D) All of the above
88. The magnitude of the resultant of two forces is F. The magnitude of each force is F. the angle between the forces must be:  
 A)  $30^\circ$  B)  $60^\circ$  C)  $120^\circ$  D)  $45^\circ$
89.  $\sin\left(a + \frac{\pi}{2}\right) =$   
 A)  $\sin a$  B)  $-\sin a$  C)  $\cos a$  D)  $-\cos a$
90. Propene is unsymmetric molecule the addition of HI will result in the formation of:  
 A)  $\text{H}_3\text{C}-\text{CH}-\text{CH}_3$  B)  $\text{CH}_3\text{CH}_2\text{I}$   
 C)  $\text{CH}_3\text{CHCH}_3 + \text{CH}_3\text{CH}_2\text{I}$   
 D)  $\text{CH}_2=\text{CH}-\text{CH}_3 + \text{H}_2$

91. 'PRECISE' is a short summary of the essential ideas of:  
 A) A mixture of passages B) The underlying theme C) The overview practice D) A longer composition
92. An electron in a hydrogen atom makes a transition from an energy level with energy  $E_1$  to one with energy  $E_2$  and simultaneously emits a photon. The wavelength of the emitted photon  
 A)  $h/E_1, E_2$  B)  $h\omega/E_2, E_1$  C)  $h/c(E_1 - E_2)$  D)  $(E_1 - E_2)/hc$
93. For a geometric series  $a_1 + a_2 + a_3 + \dots + a_n$  with common ratio  $r \neq 1$ ,  $S_n =$   
 A)  $\frac{r^n - 1}{r - 1}$  B)  $\frac{r - 1}{r^n - 1}$  C)  $\frac{a_1(r^n - 1)}{r - 1}$  D)  $\frac{a_1(r^n + 1)}{r + 1}$
94. Styrene is polymerized at high temperature of about  $600^\circ\text{C}$  in the presence of a catalyst:  
 A) Iron oxide B) Platinum gauze C) Iridium D) Nickel
95. Which one of the following has the largest energy content?  
 A)  $10^2$  photons of wavelength 1 pm ( $\gamma$ -ray) B)  $10^5$  photons of wavelength 2 pm ( $\gamma$ -ray)  
 C.  $10^6$  photons of wavelength 5  $\mu\text{m}$  (infra-red rays) D.  $10^8$  photons of wavelength 600 nm (yellow light)
96. The roots of the equation  $25x^2 - 30x + 9 = 0$  are:  
 A) imaginary B) Rational and equal C) Rational and unequal D) Irrational and equal
97. Which X — H bond angle is greatest in the following compounds? Where X = C, N, O, S  
 A)  $\text{CH}_4$  B)  $\text{NH}_3$  C)  $\text{H}_2\text{O}$  D)  $\text{H}_2\text{S}$
98. What is represented by the gradient of a graph of force (vertical axis) against extension (horizontal axis)?  
 A) Elastic limit B) Spring constant C) Stress D) Young modulus
99. If  $f(x) = \frac{x}{x+1}$  then  $[f(2)]^{-1} =$   
 A)  $\frac{1}{2}$  B)  $\frac{-2}{3}$  C)  $\frac{2}{3}$  D)  $\frac{3}{2}$
100. Which statement given below is not true for the reaction?  $\text{Fe}^{3+} + e \rightarrow \text{Fe}^{2+}$   
 A)  $\text{Fe}^{3+}$  is being reduced B. The oxidation state of Fe has changed  
 C.  $\text{Fe}^{3+}$  could be referred to as a reducing agent in this reaction  
 D. Both  $\text{Fe}^{3+}$  and  $\text{Fe}^{2+}$  are called cations
101. 'COME OF AGE' implies:  
 A) To get married off B. To become very old  
 C. To reach maturity D. To fall ill and expire
102. If a stationary electron is subjected to a uniform magnetic field it will be:  
 A) Unaffected B. Accelerated in the direction of field  
 C. Caused to move in a circular path D. Caused to oscillate about a fixed point
103. If  $a, b, c$  are the sides of a triangle and  $\alpha, \beta, \gamma$  are the respective angles, then area of the triangle is:  
 A)  $\frac{1}{2} a^2 \sin \beta$  B)  $\frac{1}{2} b^2 \sin \gamma$  C)  $\frac{1}{2} c^2 \sin \alpha$  D)  $\frac{1}{2} bc \sin \alpha$
104. Which one of the following will be more acidic?  
 A) 1-Pentene B) 1-Pentyne C) 3-Hexyne D) 2-Pentyne
105. The gate which inverts the output of an OR gate is:  
 A) NOR B) AND C) XOR D) NAND
106.  $\pi$  radians = A)  $60^\circ$  B)  $90^\circ$  C)  $360^\circ$  D)  $180^\circ$
107. Choose the correct product of the following reaction:  $\text{CH}_3\text{CH}_2\text{OH} + \text{PCl}_5 \rightarrow$   
 A)  $\text{CH}_3\text{Cl} + \text{POCl}_3 + \text{H}_2\text{O}$  B.  $\text{CH}_3\text{CH}_2\text{Cl} + \text{POCl}_3 + \text{H}_2\text{O}$   
 C.  $\text{CH}_3\text{CH}_2\text{Cl} + \text{Cl} + \text{POCl}_3 + \text{HCl}$  D.  $\text{C}_2\text{H}_5\text{Cl} + \text{H}_3\text{PO}_3$
108. When atoms in the gaseous state are excited to emit radiations, the spectrum obtained is:  
 A) Band spectrum B) Line spectrum  
 C) Continuous spectrum D) None of the above

109. For what value of  $k$  will equation  $x^2 - kx + 4 = 0$  have the sum of roots equal to the product of roots?  
 A) 3 B) -2 C) -4 D) 4
110. Which one of the following is not a state function?  
 A) Enthalpy B) Free energy C) Work D) energy
111. "I shall be in Geneva on Monday," he said. Select the correct indirect speech:  
 A) He said that he would be in Geneva on Monday. B) He said that he shall be in Geneva on Monday.  
 C) He told that he would be in Geneva on Monday. D) He hoped that he could be in Geneva on Monday.
112. Which one of the following particles belongs to Hadron group?  
 A) Neutrino B) Proton C) Electron D) Antineutrino
113. The product of the fourth roots of unity is:  
 A) Zero B) 1 C) -1 D) -i
114. In lower atmosphere, ozone has adverse effects due to its role in the formation of:  
 A)  $\text{CO}_2$  B)  $\text{NO}_2$  C) Fog D) Photochemical smog
115. In an AC capacitive circuit, current and voltage phase relation is:  
 A) In-phase B) Current leads voltage by  $90^\circ$   
 C) Voltage leads voltage by  $90^\circ$  D) Current leads voltage by  $180^\circ$
116.  $\int x^n dx =$   
 A)  $\frac{x^{n+1}}{n+1} + C, n \neq -1$  B)  $nx^{n+1} + C, n \neq -1$  C)  $\frac{x^{n-1}}{n-1} + C, n \neq -1$  D)  $\frac{x^{n-1}}{n-1} + C, n \neq -1$
117. Identify the name of coordination compound  $\text{K}_4[\text{Fe}(\text{CN})_6]$ :  
 A) Potassium hexa cyanoferrate B) Potassium hexa cyanoferrate (II)  
 C) Potassium hexa cyanoferrate (III) D) Potassium (I) hexa cyanoferrate (IV)
118. Keeping magnetic field  $B$  and velocity of the particles same, which particle will show the most deflection when passes through the magnetic field:  
 A) Neutrons B)  $\alpha$ -particles C)  $\beta$ -particles D)  $\gamma$ -rays
119. Which of the following sets has closure property with respect to multiplication?  
 A)  $\{-1, +1\}$  B)  $\{-1\}$  C)  $\{-1, 0\}$  D)  $\{0, 2\}$
120.  $\text{PbSO}_4(s) + 2e^- \rightarrow \text{Pb}(s) + \text{SO}_4^{2-} - 0.36\text{V}$        $\text{PbO}_2(s) + 4\text{H}^+ + \text{SO}_4^{2-} + 3e^- \rightarrow \text{PbSO}_4(s) + 1.69\text{V}$   
 The two half cell reactions above are involved in the discharge of a lead storage battery. The potential of a single cell lead storage is:  
 A) 1.33 volts B) 4.10 volts C) 2.66 volts D) 2.06 volts
121. The might promote Javed next year.  
 Select the correct passive voice:  
 A) Javed might be promoted by them next year. B) Promoted by them Javed might be next year.  
 C) By them Javed might be promoted next year. D) Next year Javed might be promoted by them.
122. Particles giving rise to dense, straight and continuous tracks in a cloud chamber due to ionization produced by them are:  
 A) Beta particles B) Alpha particles C) Gamma rays D) Photo electrons
123. The coordinates of the midpoint of the line segment whose end points are  $P_1(-10, 4)$ ,  $P_2(7, -5)$  are:  
 A)  $(4, \frac{-1}{2})$  B)  $(\frac{2}{3}, 2)$  C)  $(\frac{3}{2}, \frac{1}{2})$  D)  $(\frac{-2}{2}, \frac{-1}{2})$
124. The electronic configuration of gallium, atomic number 31, is:  
 A)  $[\text{Ar}] 4s^2 3d^8 4p^3$  B)  $[\text{Kr}] 4s^2 3d^{10} 4s^3$  C)  $[\text{Ar}] 4s^2 3d^{10} 4p^1$  D)  $[\text{Ar}] 3s^2 3d^{10} 4p^1$
125. A ball is dropped from the roof of a very tall building. What is its velocity after falling for 5.00 seconds?  
 A) 1.96 m/s B) 9.80 m/s C) 49.0 m/s D) 98.0 m/s
126. The inverse relation of  $y = \sin x$  is defined by the equation:  
 A)  $y = \sin^{-1} x$  B)  $x = \sin^{-1} y$  C)  $y = \cos x$  D)  $x = \cos^{-1} y$

127. All of the following tests are used to identify aldehyde except:  
 A) Tollen's test      B) Fehling test      C) Benedict test      D) Baeyer's test
128. A wire of resistance  $4\Omega$  is bent into a circle. The resistance between the ends of a diameter of the circle is:  
 A)  $1\Omega$       B)  $\frac{1}{4}\Omega$       C)  $\frac{1}{16}\Omega$       D)  $4\Omega$
129. Parallel sides of a trapezium are  $x$  and  $y$ , the distance between these two sides is  $z$ . Area of the trapezium =  
 A)  $(x+y)\frac{z}{2}$       B)  $(x-y)\frac{z}{2}$       C)  $2z(x+y)$       D)  $\frac{2z}{x+y}$
130. Which of the following is the strongest oxyacid?  
 A)  $\text{HClO}_4$       B)  $\text{HClO}_3$       C)  $\text{HClO}_2$       D)  $\text{HClO}$
131. Leagerly-look forward... seeing her again.  
 A) At      B) To      C) On      D) by
132. Nuclear forces are inside the nucleus. These forces are:  
 A) Long range      B) Short range      C) Medium range      D) Not range dependent
133. If  $f(x) = x^2 + x - 1$ , then the images of 2, 3, are:  
 A) 7, 13, 31      B) 5, 12, 26      C) 5, 11, 29      D) 3, 8, 24
134. Arrange electromagnetic spectrum in terms of wavelength in correct order:  
 A) i.f.>u.v.> visible> microwave> radio frequency  
 B) u.v.> visible> i.r.> microwave> radio frequency  
 C) isible> i.r.> b.v.> microwave> radio frequency  
 D) Radio frequency> microwave> Lr.> visible> u.v.
135. Reaction in which two or more light nuclei use together to form a single nuclide is categorized as:  
 A) Nuclear fission      B) Chemical reaction      C) Nuclear fusion      D) None of above
136.  $\sin$  is  
 A)  $\frac{1}{2}(e^{-x} + e^{-x})$       B)  $\frac{1}{2}(e^x + e^{-x})$       C)  $\frac{1}{2}(e^{-x} - e^{-x})$       D)  $\frac{1}{2}(e^x + e^{-x})$
137. The log of rate constant of a reaction is:  
 A) Directly proportional to temperature      B. Inversely proportional to temperature  
 C. Not affected by temperature      D. Not dependent on the activation energy
138. The derivative of  $-8x^5$  is:  
 A) A-rays      B)  $\beta$ -particles      C) Y-rays      D) neutrons
139. The amount of ionization produced in a gas is the most due to:  
 A) -8      B)  $-40x$       C)  $-40x^5$       D)  $-40x^4$
140. What energy (in joules) would a photon of light with a wave length  $3 \times 10^{-4}$  cm ( $h=6.6 \times 10^{-34}$  Jsec) have  
 A)  $2.2 \times 10^{-44}$       B)  $3.3 \times 10^{-21}$       C)  $6.6 \times 10^{-20}$       D)  $6.6 \times 10^{-48}$
141. Select the correct sentence:  
 A) But brightly polished were the old shoes      B. Old were the shoes but brightly polished  
 C. The shoes were old but polished brightly      D. The shoes were old but brightly polished
142. The state of thermal equilibrium between two systems is determined by equality of:  
 A) Pressure      B) Volume      C) Temperature      D) mass
143.  $\int_1^2 x dx =$   
 A) 1      B)  $\frac{3}{2}$       C) 2      D)  $\frac{2}{3}$
144. Which of the following is not a polymer?  
 A) Urea      B) Starch      C) Polythene      D) Natural rubber
145. In liquid metal fast breeder reactor the moderator used is:  
 A) Graphite      B) Heavy water      C) Boron rods      D) Not required
146. If the point  $P_1$  and  $P_2$  have the coordinates  $x_1 = 7$ ,  $x_2 = -9$ , then  $[P_1P_2]$   
 A) -2      B) 16      C) 2      D) -16

147. Which of the following reagents may not be used for the oxidation of aldehydes and ketones to carboxylic acids?

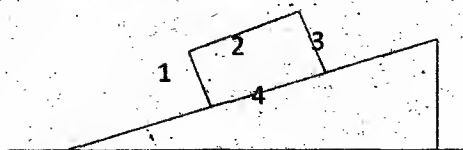
A)  $\text{LiAlH}_4$

B)  $\text{KMnO}_4$

C)  $\text{K}_2\text{Cr}_2\text{O}_7$

D)  $\text{Na}_2\text{Cr}_2\text{O}_7$

148. In the diagram, a box slides down an incline plane. Toward which point is the force of friction directed?



a. 1

b. 2

c. 3

d. 4

149. Two lines with slope  $m_1$  and  $m_2$  respectively are parallel if:

A)  $m_1 + m_2 = 0$

B)  $m_1 - m_2 = 0$

C)  $m_1, m_2 = 1$

D)  $m_1 = m_2$

150. The coordination number of cobalt in the complex  $[\text{Co}(\text{H}_2\text{NCH}_2\text{CH}_2\text{NH}_2)_3]^{+3}$  is:

A) 3

B) 4

C) 5

D) 6

151. The senator is opposed ..... this new legislation.

A) To

B) At

C) By

D) on

152. The half-life of  $^{22}\text{Na}_{11}$  is 2.6 years. If X grams of this sodium isotope are initially present, how much is left after 13 years?

A)  $X/32$

B)  $X/13$

C)  $X/8$

D)  $X/5$

153. Length of the latus rectum of  $3x^2 = 4y$  is:

A) 4

B) -4

C)  $\frac{4}{3}$

D)  $\frac{3}{4}$

154. What is the bond order in  $\text{F}_2$  according to the molecular orbital theory?

A) 2

B) 3

C) 1

D) 4

155. The centripetal acceleration of a car traveling at constant speed around a frictionless circular racetrack:

A) Is zero

B. Has constant magnitude but varying direction

C. Has constant direction but varying magnitude

D. Has varying magnitude and direction

156. The distance of a point  $(-2, 8)$  from a line  $4x + 3y - 11 = 0$  is:

A) -6

B) 1

C) 3

D) 5

157. Nitrogen dioxide is a brown coloured gas which exists in equilibrium with:

A)  $\text{HNO}_3$

B)  $\text{N}_2\text{O}_4$

C)  $\text{NO} + \text{NO}_3$

D)  $\text{N}_2 + \text{O}_2$

158. A diver is swimming 10 meters below the surface of the water in a reservoir. There is no current, the air has a pressure of 1 atmosphere, and the density of the water is 1000 kilograms per cubic meter. What is the pressure experienced by the diver?

A) 1.1 atm

B) 11 atm

C)  $1.99 \times 10^5 \text{ Pa}$

D)  $1.01 \times 10^5 \text{ Pa}$

159. The set of all first elements of the ordered pairs in a relation R is called:

A) Domain of R

B) Range of R

C) Co-domain of R

D) Subset of R

160. The complex compound  $[\text{Ni}(\text{CN})_4]^{2-}$  is square planar in shape. What is the type of hybridization involved?

A)  $\text{sp}^3$

B)  $\text{s}^3\text{d}$

C)  $\text{dsp}^3$

D)  $\text{dsp}^2$

161. 'ENTOURAGE' means:

A) Group of companions

B) Embark on long tons

C) Place one visits daily

D) Albums of folk singer

162. Which species has no net charge?

A) An  $\alpha$ -particle

B) A neutrino

C) An electron

D) A proton

163.  $\frac{d}{dx}(\text{cosec } x) =$

A)  $\tan x \cdot \text{cosec } x$

B)  $-\cot x \cdot \sec x$

C)  $-\tan x \cdot \sec x$

D)  $-\cot x, \text{cosec } x$

164. Which one of the following compounds is insoluble in water?

A)  $\text{CuCl}_2$

B)  $\text{NiCl}_2$

C)  $\text{Hg}_2\text{Cl}_2$

D)  $\text{KCl}$



165. What is the optimum difference in phase for maximum destructive interference between two waves of the same frequency? A)  $180^\circ$  B)  $90^\circ$  C)  $270^\circ$  D)  $360^\circ$
166.  $\frac{d}{dx} \operatorname{cosec}^{-1} x =$   
A)  $\frac{1}{\sqrt{1+x^2}}$  B)  $\frac{1}{\sqrt{1-x^2}}$  C)  $\frac{-1}{\sqrt{1+x^2}}$  D)  $\frac{-1}{\sqrt{1-x^2}}$
167. Which one of the following has the smallest ionic radius:  
A)  $\text{Mg}^{2+}$  B)  $\text{Be}^{2+}$  C)  $\text{Ca}^{2+}$  D)  $\text{Si}^{2+}$
168. Which derived unit below is equivalent to the SI unit for magnetic field strength, the tesla, T?  
A) Nm/A B) NA/m C) N/Am D) Am/N
169. If  $m_1$  and  $m_2$  are the slopes of two lines  $l_1$  and  $l_2$  respectively, then the angle from  $l_1$  to  $l_2$  is given by:  
A)  $\tan \theta = \frac{m_2 - m_1}{1 + m_1 m_2}$  B)  $\tan \theta = \frac{m_2 + m_1}{1 - m_1 m_2}$  C)  $\cot \theta = \frac{m_2 - m_1}{1 + m_1 m_2}$  D)  $\cot \theta = \frac{m_2 + m_1}{1 - m_1 m_2}$
170. Ethyl alcohol was added to water to form a clear solution. What do you expect to be the vapour pressure?  
A) It will be equal to V.P of water B) It will be more than V.P of water  
C) It will be less than V.P of water D) It will be equal to V.P of ethyl alcohol
171. Your essay impressed the lecturer. *Select the correct passive voice:*  
A) The lecturer got impressed by your essay. B) The lecturer felt impressed by your essay.  
C) By your essay the lecturer was impressed D) The lecturer was impressed by your essay
172. A car with a mass of 800 kg is stalled on a road. A truck with a mass of 1200 kg comes around the curve at 20 m/s and hits the car. The two vehicles remain locked together after the collision. What is their combined velocity after the impact?  
A)  $3 \text{ ms}^{-1}$  B)  $6 \text{ ms}^{-1}$  C)  $12 \text{ ms}^{-1}$  D)  $24 \text{ ms}^{-1}$
173.  $A_1x + b_1y + c_1 = 0$ ,  $a_2x + b_2y + c_2 = 0$  and  $a_3x + b_3y + c_3 = 0$  are three non-parallel lines.  
These lines are concurrent if  $\begin{bmatrix} a_1 & b_1 & c_1 \\ a_2 & b_2 & c_2 \\ a_3 & b_3 & c_3 \end{bmatrix} =$  a. -1 b. a  
c. 0 d. -2
174. Which of the following would you consider to be comparatively more reactive?  
A)  $\text{C}_2\text{H}_6$  B)  $\text{C}_2\text{H}_4$  C)  $\text{C}_2\text{H}_2$  D)  $\text{C}_3\text{H}_8$
175. Current in an ionized gas sample depends on:  
A) Cations only B) Anions only C) Free electrons only  
D) Cations, anions, and free electrons
176. If  $a \cdot (b + c) = a \cdot b + a \cdot c$ , then:  
A) Vector product is distributive over multiplication  
B) Scalar product is distributive over multiplication  
C) Vector product is associative over addition  
D) Scalar product is distributive over addition
177. 18.0 grams of glucose,  $\text{C}_6\text{H}_{12}\text{O}_6$  was dissolved in 70.0 grams of water. The relative lowering of vapour pressure would be: A) 4.1 B)  $\frac{1}{41}$  C) 4.0 D)  $\frac{1}{40}$
178. Monochromatic light passes through two parallel slits in a screen and falls on a piece of film. The pattern produced is an example of:  
A) Interference and reflection B) Interference and diffraction  
C) Refraction and diffraction D) Diffraction and polarization
179. If  $x^2 + y^2 + 2gx + 2fy + c = 0$  is the general form of the equation of circle, then radius =  
A)  $\sqrt{g^2 + f^2 - c}$  B)  $g^2 + f^2 - c$  C)  $\sqrt{g^2 + f^2 + c}$  D)  $g^2 + f^2 + c$

180. Which is not a raw material for the production of cement?  
 A)  $\text{CoCO}_3$  B)  $\text{CaCO}_3$  C)  $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$  D) Clay
181. In grammatical context, 'ARTICLES' allude to:  
 A) A, an and the B) For and since C) Lexical verbs D) Word classes
182. What is the acceleration of a falling stone whose velocity increases from 80 m/s to 100 m/s in 2 seconds?  
 A)  $0.10 \text{ m/s}^2$  B)  $10 \text{ m/s}^2$  C)  $100 \text{ m/s}^2$  D)  $90 \text{ m/s}^2$
183. The equation of the circle whose centre is the origin and radius is 3 units is:  
 A)  $x^2 + y^2 = 3$  B)  $x^2 - y^2 = 3$  C)  $x^2 + y^2 = 9$  D)  $x^2 - y^2 = 9$
184. Aluminum from scrap metal is extracted by solvent extraction technique by using the liquid:  
 A) Dichloro diethyl ether B) Ethanol C) Phenol D) Mercury
185. A certain radionuclide decays by emitting an  $\alpha$ -particle. What is the difference between the atomic numbers of the parent and the daughter: A) 1 B) 2 C) 4 D) 6
186. Equation of the ellipse is:  
 A)  $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$  B)  $\frac{a^2}{x^2} + \frac{y^2}{b^2} = 1$  C)  $\frac{x^2}{a^2} - \frac{y^2}{b^2} = 1$  D)  $\frac{a^2}{x^2} + \frac{b^2}{y^2} = 1$
187. The best technique for detecting narcotics in blood is:  
 A) Solvent extraction B) Distillation C) Chromatography D) All of the above
188. If the mass of a moving body is doubled, the inertia of the body will be:  
 A) Half as great as its original value B) Four times as great as its original value  
 C) Unchanged from its original value D) Twice as great as its original value
189. Equation of the normal at the point  $(x_1, y_1)$  to the parabola  $y^2 = 4ax$  is:  
 A)  $Yy_1 = 2a(x + x_1)$  B)  $Y - y_1 = \frac{y_1}{2a}(x - x_1)$  C)  $Y + y_1 = \frac{-y_1}{2a}(x + x_1)$  D)  $Yy_1 = 2a(x - x_1)$
190. Which one of the following compounds has the shortest carbon-halogen bond?  
 A)  $\text{CH}_3\text{F}$  B)  $\text{CH}_3\text{Cl}$  C)  $\text{CH}_3\text{Br}$  D)  $\text{CH}_3\text{I}$
191. 'HAVE CLEAN HANDS' implies:  
 A) Wash one's hands B) Go for corruption C) Not being guilty D) Prepare for prayers
192. If the speed at which a car is traveling is tripled, by what factor does its kinetic energy increase?  
 A)  $\frac{1}{2}$  B) 3 C) 6 D) 9
193. The conic having eccentricity  $e > 1$ , is called:  
 A) Hyperbola B) Ellipse C) Parabola D) Asymptotes
194. Which one of the following does not form covalent crystals?  
 A) Diamond B) Allcon C) Graphite D) Water
195. Two electrically neutral materials are rubbed together. One acquires net positive charge. The other must have:  
 A) Lost electrons B) Gained electrons C) Lost protons D) Gained protons
196. If  $\mathbf{a}$  and  $\mathbf{b}$  are parallel vectors but opposite in direction and  $\theta = 180^\circ$ , then  $\mathbf{a} \cdot \mathbf{b} =$   
 A) 1 B) -1 C)  $-\mathbf{ab}$  D)  $\mathbf{ab}$
197. Which gas occupies the largest volume at STP?  
 A) 16g of  $\text{CH}_4$  B) 32g of  $\text{O}_2$  C) 28g of  $\text{N}_2$  D) 4g of  $\text{H}_2$
198. A current of 20.0 A flows through a battery with an emf of 6.20 V. If the internal resistance of the battery is 0.010, what is the terminal voltage?  
 A) 1.24V B) 6.00V C) 6.40V D) 31.0V
199. If  $|\mathbf{a}| = 3$ ,  $|\mathbf{b}| = 4$  and  $\theta = 60^\circ$ , then  $\mathbf{a} \cdot \mathbf{b} =$  A)  $\frac{1}{2}$  B)  $\frac{\sqrt{3}}{2}$  C) 6 D) 2
200. Which one is the oxidizing agent in the following reaction?  
 A)  $\text{Cu}^{2+}$  B) Zn C)  $\text{Zn}^{2+}$  D) Cu

X-----X

KEY—MEDICAL PAPER 2005

1	B	26	B	51	D	76	B	101	C	126	C	151	C	176	--
2	A	27	--	52	B	77	A	102	A	127	A	152	B	177	A
3	C	28	B	53	D	78	A	103	B	128	C	153	--	178	D
4	B	29	A	54	A	79	C	104	D	129	C	154	B	179	B
5	C	30	B	55	--	80	C	105	C	130	B	155	D	180	D
6	D	31	B	56	D	81	--	106	B	131	A	156	A	181	--
7	B	32	A	57	C	82	B	107	D	132	A	157	C	182	C
8	D	33	C	58	B	83	D	108	B	133	D	158	--	183	D
9	C	34	--	59	D	84	C	109	D	134	A	159	D	184	A
10	A	35	D	60	C	85	C	110	A	135	C	160	B	185	C
11	B	36	B	61	A	86	D	111	C	136	A	161	A	186	C
12	A	37	C	62	--	87	B	112	D	137	A	162	D	187	A
13	D	38	B	63	B	88	A	113	B	138	D	163	C	188	D
14	--	39	C	64	A	89	D	114	C	139	B	164	A	189	C
15	A	40	A	65	C	90	C	115	A	140	C	165	B	190	B
16	A	41	A	66	B	91	A	116	D	141	A	166	D	191	--
17	D	42	B	67	D	92	B	117	B	142	C	167	--	192	--
18	C	43	C	68	A	93	A	118	D	143	A	168	B	193	--
19	A	44	B	69	D	94	A	119	B	144	B	169	C	194	--
20	A	45	D	70	A	95	D	120	A	145	C	170	A	195	--
21	B	46	A	71	D	96	B	121	A	146	B	171	C	196	--
22	--	47	A	72	C	97	A	122	D	147	A	172	B	197	--
23	B	48	C	73	D	98	D	123	A	148	C	173	D	198	--
24	C	49	C	74	A	99	B	124	D	149	C	174	B	199	--
25	d	50	a	75	C	100	c	125	d	150	b	175	a	200	--

KEY - MEDICAL PAPER 2006

1	B	26	D	51	A	76	D	101	D	126	D	151	C	176	--
2	C	27	C	52	A	77	B	102	C	127	B	152	A	177	--
3	D	28	B	53	C	78	C	103	A	128	B	153	C	178	--
4	D	29	B	54	A	79	C	104	B	129	B	154	D	179	--
5	C	30	A	55	B	80	B	105	B	130	A	155	A	180	--
6	C	31	B	56	A	81	C	106	D	131	C	156	a	181	--
7	C	32	A	57	D	82	C	107	A	132	D	157	C	182	--
8	D	33	A	58	A	83	A	108	B	133	D	158	A	183	--
9	A	34	B	59	D	84	C	109	D	134	C	159	A	184	--
10	C	35	D	60	A	85	B	110	C	135	C	160	C	185	--
11	A	36	C	61	A	86	D	111	C	136	A	161	C	186	--
12	D	37	A	62	D	87	A	112	B	137	B	162	B	187	--
13	B	38	B	63	A	88	C	113	D	138	B	163	B	188	--
14	D	39	C	64	A	89	C	114	C	139	D	164	D	189	--
15	D	40	B	65	B	90	D	115	--	140	B	165	B	190	--
16	C	41	C	66	A	91	--	116	C	141	--	166	D	191	--
17	B	42	B	67	C	92	A	117	D	142	A	167	C	192	--
18	C	43	A	68	C	93	A	118	C	143	D	168	A	193	--
19	B	44	A	69	B	94	B	119	B	144	B	169	A	194	--
20	C	45	B	70	B	95	D	120	B	145	D	170	D	195	--
21	B	46	C	71	C	96	D	121	B	146	A	171	--	196	--
22	C	47	C	72	C	97	A	122	A	147	C	172	--	197	--
23	C	48	C	73	B	98	C	123	C	148	D	173	--	198	--
24	B	49	--	74	B	99	C	124	A	149	d	174	--	199	--
25	d	50	b	75	c	100	a	125	d	150	c	175	--	200	--

KEY MEDICAL 2007

1	B	26	D	51	D	76	D	101	D	126	C	151	b	176	A
2	-	27	D	52	A	77	B	102	C	127	A	152	A	177	C
3	B	28	D	53	D	78	C	103	A	128	C	153	C	178	D
4	C	29	C	54	D	79	C	104	D	129	B	154	D	179	D
5	A	30	D	55	C	80	B	105	C	130	A	155	D	180	C
6	B	31	A	56	D	81	C	106	-	131	C	156	D	181	C
7	A	32	A	57	C	82	D	107	A	132	B	157	B	182	B
8	C	33	D	58	D	83	A	108	B	133	D	158	B	183	C
9	A	34	C	59	D	84	C	109	B	134	B	159	B	184	D
10	D	35	B	60	A	85	B	110	C	135	D	160	A	185	A
11	D	36	C	61	A	86	D	111	C	136	C	161	C	186	A
12	C	37	B	62	D	87	A	112	B	137	C	162	D	187	D
13	A	38	A	63	A	88	C	113	A	138	A	163	D	188	A
14	D	39	A	64	A	89	C	114	C	139	D	164	C	189	A
15	C	40	A	65	B	90	D	115	B	140	D	165	C	190	C
16	B	41	D	66	A	91	A	116	C	141	C	166	A	191	C
17	D	42	B	67	C	92	A	117	D	142	B	167	B	192	B
18	B	43	C	68	C	93	A	118	C	143	B	168	B	193	B
19	A	44	A	69	B	94	B	119	B	144	A	169	D	194	D
20	A	45	B	70	B	95	D	120	B	145	A	170	B	195	B
21	C	46	B	71	C	96	D	121	B	146	C	171	B	196	D
22	B	47	D	72	C	97	A	122	C	147	D	172	A	197	C
23	B	48	A	73	B	98	A	123	A	148	A	173	D	198	A
24	B	49	D	74	B	99	C	124	D	149	B	174	B	199	A
25	d	50	d	75	C	100	A	125	C	150	C	175	D	200	D



## KEY - MEDICAL PAPER 2012

1	C	26	C	51	C	76	a	101	B	126	B	151	C	176	C
2	C	27	D	52	A	77	B	102	C	127	A	152	B	177	C
3	A	28	B	53	B	78	B	103	A	128	D	153	C	178	D
4	B	29	A	54	C	79	A	104	A	129	D	154	D	179	A
5	D	30	B	55	D	80	A	105	C	130	C	155	A	180	B
6	C	31	C	56	A	81	D	106	A	131	B	156	B	181	A
7	A	32	D	57	B	82	C	107	D	132	A	157	B	182	C
8	B	33	C	58	C	83	B	108	D	133	D	158	A	183	D
9	B	34	B	59	D	84	D	109	B	134	A	159	C	184	B
10	A	35	A	60	D	85	D	110	B	135	C	160	D	185	D
11	A	36	D	61	B	86	B	111	A	136	B	161	A	186	A
12	C	37	A	62	A	87	C	112	D	137	C	162	B	187	D
13	A	38	D	63	D	88	A	113	B	138	B	163	D	188	A
14	C	39	B	64	C	89	C	114	A	139	D	164	A	189	C
15	D	40	D	65	A	90	A	115	C	140	A	165	A	190	B
16	B	41	B	66	D	91	D	116	D	141	D	166	C	191	C
17	B	42	D	67	A	92	B	117	B	142	C	167	D	192	B
18	D	43	C	68	C	93	B	118	A	143	C	168	B	193	D
19	D	44	A	69	B	94	A	119	D	144	B	169	D	194	B
20	A	45	B	70	C	95	D	120	C	145	B	170	B	195	C
21	A	46	C	71	A	96	A	121	A	146	D	171	A	196	B
22	B	47	D	72	D	97	A	122	A	147	C	172	C	197	A
23	C	48	A	73	B	98	D	123	C	148	A	173	B	198	D
24	D	49	B	74	C	99	B	124	D	149	A	174	A	199	B
25	C	50	D	75	D	100	C	125	B	150	D	175	B	200	B

## KEY—MEDICAL R 2013

1	B	26	B	51	D	76	D	101	D	126	C	151	C	176	B
2	B	27	B	52	A	77	C	102	B	127	C	152	D	177	C
3	D	28	C	53	B	78	A	103	A	128	C	153	D	178	D
4	B	29	C	54	C	79	C	104	C	129	A	154	D	179	C
5	A	30	C	55	B	80	C	105	B	130	B	155	B	180	C
6	C	31	C	56	B	81	B	106	C	131	A	156	C	181	B
7	A	32	A	57	B	82	C	107	A	132	B	157	D	182	B
8	B	33	A	58	C	83	B	108	B	133	C	158	B	183	D
9	D	34	B	59	C	84	C	109	A	134	A	159	B	184	D
10	B	35	B	60	B	85	B	110	C	135	D	160	D	185	C
11	B	36	A	61	A	86	C	111	D	136	D	161	A	186	D
12	A	37	B	62	B	87	C	112	A	137	B	162	D	187	B
13	C	38	D	63	C	88	C	113	D	138	C	163	C	188	C
14	C	39	C	64	C	89	B	114	C	139	D	164	A	189	C
15	C	40	B	65	C	90	D	115	B	140	D	165	D	190	B
16	C	41	B	66	A	91	C	116	D	141	C	166	A	191	C
17	B	42	C	67	C	92	C	117	D	142	C	167	D	192	C
18	B	43	C	68	B	93	D	118	C	143	B	168	A	193	B
19	B	44	C	69	B	94	A	119	B	144	C	169	B	194	C
20	C	45	C	70	D	95	B	120	B	145	B	170	C	195	C
21	C	46	D	71	A	96	B	121	C	146	B	171	C	196	C
22	B	47	A	72	B	97	B	122	C	147	B	172	D	197	B
23	D	48	C	73	C	98	C	123	B	148	B	173	A	198	D
24	B	49	D	74	C	99	C	124	B	149	B	174	C	199	C
25	B	50	C	75	B	100	B	125	D	150	b	175	b	200	c

KEY - MCQ PAPER 2008

1	B	26	--	51	A	76	A	101	C	126	C	151	C	176	--
2	D	27	--	52	A	77	D	102	C	127	--	152	--	177	B
3	B	28	--	53	C	78	A	103	C	128	--	153	C	178	B
4	A	29	B	54	A	79	C	104	C	129	D	154	A	179	B
5	A	30	A	55	A	80	--	105	A	130	A	155	C	180	A
6	B	31	A	56	A	81	A	106	C	131	C	156	A	181	A
7	A	32	B	57	D	82	C	107	B	132	B	157	A	182	B
8	C	33	C	58	C	83	D	108	D	133	C	158	B	183	C
9	A	34	B	59	D	84	A	109	C	134	B	159	D	184	A
10	D	35	D	60	A	85	B	110	D	135	B	160	B	185	D
11	D	36	C	61	C	86	A	111	B	136	--	161	C	186	--
12	--	37	A	62	A	87	A	112	A	137	C	162	B	187	D
13	--	38	B	63	B	88	B	113	B	138	C	163	D	188	B
14	--	39	C	64	C	89	A	114	--	139	B	164	--	189	A
15	C	40	B	65	A	90	C	115	C	140	B	165	D	190	B
16	--	41	C	66	B	91	B	116	A	141	D	166	A	191	D
17	C	42	B	67	A	92	A	117	B	142	D	167	A	192	C
18	B	43	A	68	D	93	C	118	C	143	B	168	B	193	D
19	A	44	A	69	C	94	A	119	C	144	C	169	B	194	C
20	--	45	B	70	C	95	A	120	C	145	C	170	B	195	B
21	B	46	C	71	A	96	A	121	C	146	D	171	B	196	A
22	B	47	C	72	A	97	C	122	A	147	C	172	B	197	B
23	B	48	C	73	--	98	A	123	C	148	A	173	A	198	D
24	--	49	--	74	D	99	B	124	--	149	B	174	D	199	C
25	D	50	B	75	B	100	C	125	A	150	A	175	A	200	D

KEY - MEDICAL PAPER 2009

1	B	25	A	49	B	73	C	97	B	121	B	145	C	169	A	193	D
2	A	26	D	50	C	74	A	98	C	122	B	146	B	170	B	194	A
3	D	27	C	51	D	75	D	99	D	123	C	147	B	171	C	195	D
4	C	28	B	52	A	76	B	100	C	124	D	148	D	172	C	196	B
5	A	29	B	53	A	77	B	101	D	125	A	149	A	173	C	197	A
6	C	30	D	54	B	78	A	102	C	126	D	150	C	174	B	198	B
7	A	31	B	55	C	79	C	103	A	127	A	151	B	175	D	199	D
8	D	32	B	56	C	80	D	104	D	128	D	152	A	176	A	200	A
9	B	33	C	57	D	81	C	105	B	129	C	153	B	177	B		
10	D	34	C	58	A	82	A	106	D	130	B	154	C	178	C		
11	A	35	D	59	B	83	D	107	A	131	C	155	D	179	C		
12	B	36	A	60	D	84	B	108	B	132	D	156	A	180	A		
13	C	37	D	61	D	85	D	109	C	133	B	157	--	181	B		
14	A	38	A	62	A	86	C	110	B	134	C	158	A	182	B		
15	B	39	A	63	C	87	C	111	D	135	B	159	--	183	A		
16	D	40	A	64	C	88	D	112	A	136	B	160	D	184	C		
17	D	41	D	65	D	89	A	113	C	137	C	161	B	185	C		
18	C	42	D	66	B	90	D	114	D	138	D	162	A	186	A		
19	A	43	A	67	B	91	C	115	A	139	A	163	D	187	B		
20	D	44	C	68	D	92	A	116	B	140	B	164	C	188	B		
21	B	45	B	69	A	93	A	117	C	141	B	165	B	189	D		
22	A	46	B	70	C	94	D	118	B	142	B	166	C	190	C		
23	D	47	C	71	B	95	D	119	A	143	C	167	B	191	A		
24	A	48	A	72	B	96	A	120	D	144	D	168	D	192	B		

KEY — MEDICAL PAPER 2010

1	B	25	A	49	C	73	B	97	B	121	C	145	C	169	D	193	--
2	D	26	B	50	B	74	B	98	D	122	B	146	C	170	A	194	C
3	C	27	D	51	A	75	D	99	B	123	A	147	B	171	D	195	D
4	A	28	D	52	C	76	D	100	A	124	B	148	A	172	B	196	B
5	A	29	B	53	D	77	A	101	A	125	C	149	C	173	D	197	B
6	A	30	D	54	C	78	B	102	B	126	D	150	C	174	C	198	A
7	A	31	C	55	D	79	B	103	C	127	B	151	D	175	B	199	C
8	A	32	D	56	C	80	A	104	B	128	C	152	D	176	A	200	B
9	D	33	D	57	A	81	D	105	B	129	C	153	B	177	C		
10	A	34	D	58	A	82	B	106	B	130	A	154	A	178	C		
11	A	35	C	59	C	83	A	107	C	131	B	155	A	179	C		
12	B	36	A	60	B	84	A	108	A	132	C	156	B	180	B		
13	A	37	C	61	C	85	D	109	A	133	A	157	D	181	A		
14	A	38	B	62	A	86	A	110	D	134	B	158	C	182	D		
15	A	39	A	63	B	87	D	111	A	135	A	159	C	183	D		
16	C	40	B	64	D	88	A	112	D	136	B	160	C	184	C		
17	D	41	D	65	D	89	C	113	C	137	A	161	A	185	D		
18	C	42	A	66	D	90	D	114	C	138	A	162	C	186	A		
19	C	43	B	67	A	91	A	115	B	139	A	163	D	187	A		
20	D	44	A	68	B	92	D	116	A	140	B	164	C	188	C		
21	D	45	C	69	B	93	D	117	B	141	D	165	B	189	--		
22	B	46	C	70	B	94	B	118	D	142	C	166	A	190	D		
23	C	47	D	71	C	95	A	119	C	143	D	167	--	191	A		
24	B	48	C	72	B	96	C	120	B	144	A	168	B	192	C		



KEY—MEDICAL PAPER 2011

1	A	25	A	49	B	73	B	97	C	121	C	145	B	169	A	193	D
2	D	26	C	50	D	74	B	98	D	122	A	146	B	170	B	194	B
3	C	27	D	51	B	75	D	99	D	123	D	147	D	171	C	195	B
4	B	28	B	52	D	76	A	100	C	124	B	148	C	172	D	196	A
5	D	29	C	53	D	77	B	101	B	125	A	149	D	173	D	197	D
6	B	30	A	54	C	78	D	102	B	126	D	150	D	174	B	198	A
7	C	31	C	55	B	79	C	103	D	127	C	151	C	175	A	199	C
8	A	32	D	56	A	80	B	104	B	128	C	152	A	176	C	200	C
9	C	33	D	57	A	81	A	105	B	129	A	153	B	177	D		
10	C	34	C	58	D	82	A	106	C	130	D	154	D	178	B		
11	B	35	A	59	C	83	D	107	B	131	A	155	A	179	C		
12	B	36	A	60	B	84	D	108	A	132	D	156	C	180	A		
13	A	37	B	61	D	85	B	109	A	133	B	157	A	181	B		
14	D	38	A	62	C	86	B	110	C	134	C	158	C	182	C		
15	A	39	C	63	B	87	C	111	D	135	C	159	D	183	A		
16	D	40	D	64	A	88	C	112	A	136	B	160	B	184	D		
17	D	41	A	65	A	89	B	113	C	137	A	161	C	185	A		
18	D	42	C	66	D	90	C	114	B	138	C	162	B	186	D		
19	C	43	B	67	B	91	A	115	A	139	D	163	D	187	B		
20	A	44	D	68	D	92	D	116	D	140	B	164	A	188	C		
21	A	45	A	69	A	93	B	117	B	141	A	165	D	189	C		
22	B	46	C	70	C	94	A	118	D	142	C	166	C	190	B		
23	B	47	B	71	D	95	B	119	D	143	D	167	B	191	B		
24	--	48	C	72	C	96	B	120	A	144	B	168	B	192	A		

KEY—ENGINEERING PAPER 2010

1	B	26	B	51	B	76	C	101	A	126	B	151	D	176	C
2	D	27	B	52	B	77	D	102	B	127	D	152	D	177	D
3	B	28	B	53	B	78	B	103	C	128	A	153	C	178	A
4	D	29	D	54	A	79	B	104	A	129	B	154	D	179	C
5	A	30	D	55	B	80	A	105	C	130	A	155	A	180	B
6	C	31	B	56	A	81	C	106	D	131	D	156	D	181	A
7	A	32	B	57	A	82	C	107	B	132	C	157	C	182	D
8	A	33	A	58	C	83	C	108	A	133	A	158	B	183	D
9	B	34	D	59	C	84	C	109	D	134	D	159	B	184	C
10	B	35	C	60	D	85	C	110	B	135	D	160	A	185	A
11	A	36	A	61	D	86	B	111	C	136	A	161	C	186	A
12	C	37	B	62	C	87	B	112	C	137	B	162	C	187	A
13	C	38	B	63	A	88	A	113	--	138	C	163	A	188	A
14	A	39	A	64	B	89	C	114	A	139	D	164	A	189	C
15	D	40	A	65	A	90	C	115	A	140	B	165	C	190	C
16	A	41	C	66	C	91	B	116	D	141	B	166	A	191	B
17	B	42	A	67	A	92	C	117	C	142	C	167	C	192	A
18	C	43	A	68	D	93	A	118	B	143	D	168	D	193	C
19	D	44	B	69	A	94	B	119	D	144	B	169	A	194	D
20	D	45	B	70	B	95	D	120	A	145	C	170	A	195	--
21	D	46	A	71	C	96	B	121	C	146	B	171	D	196	C
22	D	47	D	72	D	97	D	122	D	147	C	172	D	197	D
23	D	48	B	73	D	98	C	123	C	148	C	173	B	198	B
24	D	49	C	74	B	99	A	124	C	149	C	174	D	199	A
25	C	50	A	75	B	100	B	125	C	150	B	175	C	200	D

KEY—ENGINEERING PAPER 2011

1	B	26	A	51	B	76	C	101	A	126	D	151	C	176	D
2	A	27	B	52	C	77	B	102	D	127	B	152	B	177	C
3	D	28	D	53	D	78	D	103	D	128	D	153	D	178	D
4	B	29	A	54	D	79	A	104	C	129	C	154	D	179	C
5	D	30	D	55	C	80	C	105	B	130	A	155	C	180	B
6	D	31	B	56	C	81	D	106	A	131	B	156	B	181	D
7	A	32	B	57	A	82	B	107	A	132	A	157	A	182	B
8	C	33	C	58	B	83	B	108	C	133	C	158	A	183	A
9	B	34	D	59	C	84	C	109	C	134	D	159	D	184	A
10	A	35	B	60	D	85	A	110	B	135	A	160	B	185	B
11	C	36	C	61	D	86	D	111	C	136	C	161	A	186	C
12	D	37	A	62	D	87	D	112	B	137	B	162	A	187	D
13	A	38	C	63	A	88	A	113	B	138	D	163	B	188	C
14	—	39	B	64	B	89	C	114	D	139	B	164	D	189	C
15	C	40	C	65	C	90	D	115	B	140	B	165	D	190	D
16	A	41	C	66	D	91	A	116	A	141	A	166	B	191	A
17	D	42	B	67	A	92	C	117	D	142	C	167	B	192	D
18	B	43	A	68	C	93	B	118	C	143	D	168	D	193	A
19	A	44	D	69	B	94	D	119	B	144	B	169	B	194	A
20	D	45	D	70	D	95	B	120	D	145	B	170	A	195	B
21	B	46	B	71	A	96	D	121	D	146	C	171	C	196	D
22	B	47	A	72	C	97	B	122	C	147	C	172	A	197	D
23	C	48	A	73	B	98	C	123	B	148	D	173	C	198	C
24	D	49	C	74	A	99	D	124	C	149	A	174	B	199	C
25	C	50	b	75	c	100	A	125	A	150	A	175	d	200	B

KEY—ENGINEERING PAPER 2012

1	B	26	C	51	C	76	A	101	B	126	B	151	C	176	A
2	A	27	B	52	D	77	A	102	D	127	C	152	A	177	B
3	A	28	C	53	D	78	D	103	A	128	D	153	C	178	C
4	A	29	B	54	A	79	C	104	C	129	B	154	D	179	A
5	A	30	B	55	C	80	B	105	A	130	C	155	A	180	D
6	B	31	D	56	B	81	D	106	C	131	D	156	B	181	A
7	C	32	C	57	A	82	C	107	B	132	A	157	C	182	C
8	B	33	A	58	C	83	A	108	A	133	C	158	A	183	D
9	C	34	B	59	D	84	B	109	B	134	B	159	D	184	B
10	D	35	B	60	D	85	C	110	A	135	D	160	B	185	C
11	A	36	C	61	A	86	D	111	C	136	A	161	A	186	A
12	A	37	A	62	C	87	B	112	D	137	D	162	B	187	C
13	C	38	C	63	B	88	B	113	D	138	C	163	--	188	D
14	D	39	D	64	D	89	B	114	C	139	B	164	B	189	C
15	B	40	B	65	C	90	A	115	A	140	D	165	C	190	A
16	A	41	B	66	B	91	C	116	A	141	A	166	C	191	D
17	A	42	A	67	C	92	D	117	D	142	--	167	D	192	B
18	A	43	C	68	D	93	A	118	A	143	C	168	A	193	A
19	C	44	D	69	A	94	D	119	B	144	D	169	B	194	C
20	D	45	B	70	B	95	B	120	B	145	A	170	C	195	D
21	A	46	D	71	A	96	C	121	B	146	C	171	A	196	A
22	D	47	C	72	B	97	B	122	A	147	B	172	D	197	A
23	A	48	A	73	B	98	A	123	C	148	C	173	A	198	A
24	D	49	D	74	D	99	D	124	C	149	B	174	C	199	B
25	B	50	A	75	C	100	C	125	A	150	B	175	B	200	B

KEY—ENGINEERING PART 2013

1	A	26	B	51	C	76	A	101	C	126	C	151	A	176	D
2	A	27	D	52	D	77	A	102	A	127	B	152	a	177	D
3	B	28	C	53	B	78	D	103	A	128	D	153	C	178	B
4	D	29	B	54	C	79	C	104	D	129	A	154	C	179	A
5	A	30	C	55	D	80	B	105	B	130	A	155	B	180	A
6	B	31	D	56	A	81	A	106	A	131	A	156	B	181	A
7	C	32	D	57	A	82	B	107	D	132	B	157	B	182	B
8	D	33	D	58	B	83	D	108	B	133	B	158	C	183	C
9	A	34	C	59	D	84	C	109	B	134	C	159	A	184	D
10	C	35	B	60	C	85	D	110	D	135	D	160	D	185	B
11	D	36	A	61	C	86	A	111	C	136	C	161	A	186	A
12	D	37	D	62	C	87	B	112	C	137	B	162	B	187	C
13	B	38	B	63	B	88	C	113	B	138	A	163	D	188	D
14	C	39	C	64	A	89	C	114	C	139	A	164	C	189	A
15	B	40	A	65	A	90	A	115	D	140	D	165	A	190	A
16	A	41	D	66	B	91	D	116	B	141	C	166	C	191	C
17	A	42	A	67	C	92	B	117	A	142	D	167	B	192	D
18	B	43	C	68	D	93	C	118	B	143	C	168	C	193	A
19	D	44	D	69	C	94	A	119	C	144	B	169	A	194	D
20	C	45	A	70	B	95	B	120	A	145	A	170	B	195	B
21	D	46	D	71	D	96	B	121	D	146	D	171	D	196	C
22	B	47	B	72	A	97	A	122	A	147	B	172	C	197	D
23	C	48	C	73	B	98	B	123	B	148	A	173	C	198	B
24	A	49	B	74	C	99	D	124	D	149	C	174	B	199	C
25	A	50	A	75	D	100	C	125	C	150	B	175	C	200	A



102. The range of a projectile is the same for two angles which are mutually  
 a. Orthogonal b. Supplementary c. Complementary d. Sum is  $45^\circ$
103. The  $\text{CH}_3\text{CH}_2\text{Cl}$  reacts with dry  $\text{Ag}_2\text{O}$  to give:  
 a. Diethyl ether b. Ethane c. Ethanol d. Ethanol
104. The step in glycolysis in which energy transfer is not involved is.  
 a. Glucose phosphatase  $\rightarrow$  Fructose diphosphate b. Fructose diphosphate  $\rightarrow$  Dap  
 c. Pgal  $\rightarrow$  pg ap d. Pgap  $\rightarrow$  pga
105. The vectoral form of centripetal force is  
 a.  $\vec{F}_c = \frac{mv^2}{r}$  b.  $\vec{F}_c = \frac{mv^2}{r} \hat{r}$  c.  $\vec{F}_c = \frac{mv^2}{r^2} \hat{r}$  d.  $\vec{F}_c = \frac{mv^2}{r^2} \hat{r}$
106. ....
107. Which one among the following is in fact a fruit but is available at vegetables shop?  
 a. Capsicum annum b. Solanum tuberosum c. Medicago denticulate d. Baubinia variegata
108. A 50 mH coil carries a current of 2 ampere. The energy stored in magnetic field is  
 a. 10 joule b. 0.1 joule c. 0.01 joule d. 1.0 joule
109. In an ecosystem having four trophic levels the amount of energy fixed at producer level is 23197 kcal about how much energy will be produced by the primary consumer?  
 a. 2317 kcal b. 232 kcal c. 1561 kcal d. None of above
110. A body of mass 1 kg is suspended from a balance in the elevator which is accelerating downward with an acceleration of  $4\text{ms}^{-2}$  reading of the balance will be.  
 a. 9.8 N b. 13.8 N c. 5.8 N d. Zero
111. The equilibrium constant for a reaction,  $\text{N}_2(\text{g}) + \text{O}_2(\text{g}) \rightleftharpoons 2\text{NO}(\text{g})$  is  $4 \times 10^{-4}$  at 2000K. In the presence of catalyst the equilibrium is attained 10 times faster. The equilibrium constant in presence of catalyst at 2000 K is.  
 a.  $10 \times 10^{-4}$  b.  $4 \times 10^{-4}$  c.  $40 \times 10^{-4}$  d.  $4 \times 10^{-2}$
112. The radio waves of constant amplitude are called.  
 a. Modulated waves b. Carrier waves c. Standing waves d. Rectified waves
113. The word seismology stands for.  
 a. An instrument for detecting earthquakes b. Study of sea creatures  
 c. A branch of astrology d. Scientific study of earthquakes
114. The lowest vapour pressure is exerted by.  
 a. Water b. Kerosene oil c. Mercury d. Rectified spirit
115. Complexes with bidentate ligands are called  
 a. Ligands b. Chelates c. Complexes d. None of above
116. Blood cells are produced by  
 a. Liver b. Spleen c. Bone marrow d. Heart
117. The lowering in vapour pressure is the highest for.  
 a. 0.2 M urea b. 0.1 M glucose c. 0.1 M  $\text{MgSO}_4$  d. 0.1 M  $\text{BaCl}_2$

118. The process in which heat neither enters nor leaves the system but still the temperature of the system changes is.
- a. Isobaric process      b. Isothermal process      c. adiabatic process      d. Isochoric process
119. Which of the following reactions show nucleophilic substitution of alkyl halide  $R-X$ ?
- a.  $RX + HI \rightarrow RI + HX$       b.  $RX + KCN \rightarrow RCN + KX$   
 c.  $2RX + 2Na \rightarrow R-R + 2NaX$       d.  $R-X + Mg \text{ ethers } RNgx$
120. Organs of locomotion in earth worm are.
- a. Papillae      b. Setae      c. Pseudopodia      d. Cuticle
121. If  $\vec{a} \cdot \vec{b} = 1$ ,  $a=2$  and  $b=1$ , the angle between them is.
- a.  $30^\circ$       b.  $60^\circ$       c.  $90^\circ$       d.  $45^\circ$
122. The existence of a substance in more than one solid modification is known as.
- a. Isomorphism      b. Amorphism      c. Polymorphism      d. None of above
123. In a pond ecosystem profundal zone is missing because.
- a. Pond is shallow      b. Water is turbid      c. Producers are less      d. Water is turbulent
124. Her mother would prefer to cook.
- a. Than to eat      b. Instead of eating      c. Rather than to eat      d. Rather than eat
125. A concentrated solution has got.
- a. Low solute potential      b. High water potential      c. High solute potential      d. Low pressure potential
126. If work is done at a rate of 240 watt x min by a machine its power is.
- a. 240 watt      b. 14400 watt      c. 4 watt      d. 120 watt
127. In which group all the elements do not belong to the same block and all the elements of valence electrons?
- a. Zero group      b. First group      c. Third group      d. Seventh group
128. On strong heating orthoboric acid gives.
- a. Meta boric acid      b. Tetra boric acid      c. Boric anhydride      d. None of above
129. Which one of the following animals lays eggs?
- a. Scally ant eater      b. Spiny ant eater      c. Bat      d. Whale
130. The reverse process of photoelectric effect is.
- a. X-rays      b. Annihilation of matter      c. Materialization of energy      d. Pair production
131. The empirical formula of an acid is  $CH_2O$ . The probable molecular formula of acid may be.
- a.  $CH_2O_2$       b.  $CH_2O_3$       c.  $C_2H_4O_2$       d.  $C_3H_6O_4$
132. The gate which inverts the output of AND gate is.
- a. Or gate      b. NAND gate      c. XOR gate      d. XNOR gate
133. By reacting phenol with bromine water the product obtained is.
- a. O-bromophenol      b. M-bromophenol      c. P-bromophenol      d. 2,4,6-tribromophenol
134. Protein is converted into peptone by which of the following enzyme
- a. Amylase      b. Trypsin      c. Lipase      d. Hspase